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The Security Aspect of Energy in the
1980s: An Indonesian View

Nuclear Power and the Energy Problem
in Indonesia

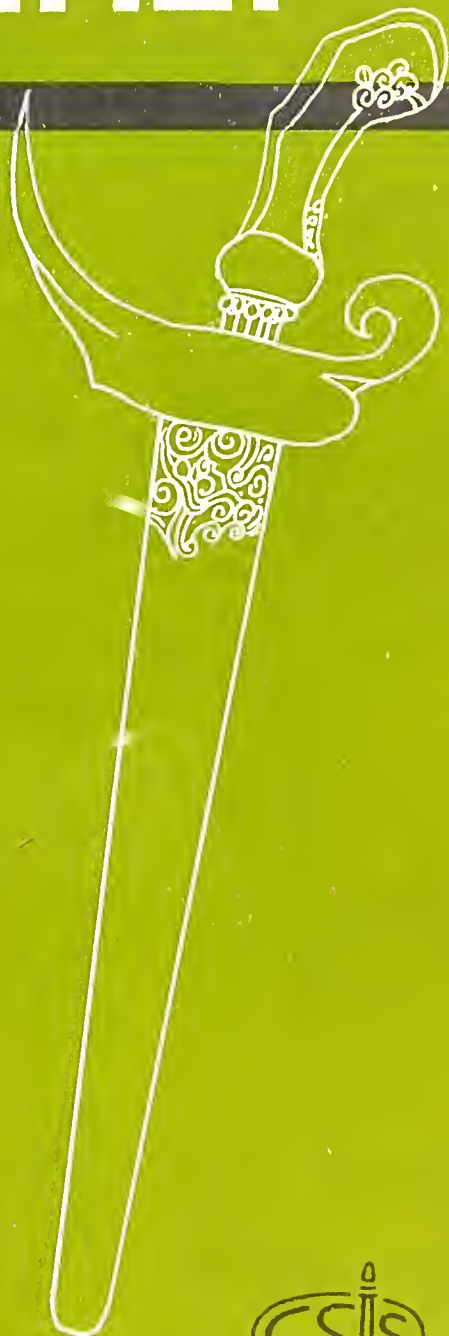
Indonesia's Domestic Oil Price Policy

Sources of Output Growth of Rice in
Indonesia Regionally, 1967-1974

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Australia and the Southeast Asian Coun-
tries

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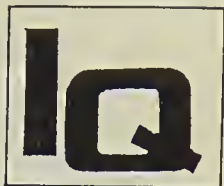
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FROM THE EDITOR

The world of the 1980s is full of uncertainties caused by the rivalries of the superpowers, the refugee problem, the war between Iraq and Iran, tensions between countries and the growing global economic problems which are also caused by the energy problem. The problem of energy - especially oil - and the security of its supply have become a serious problem which will continue to exist during the 1980s. In highlighting the seriousness of the problem Pande Radja SILALAH presented his view on the oil situation which is linked with its security aspect and the importance of time horizon in this respect.

Furthermore, to secure the oil supply and to meet the energy demands, Indonesia should look for other alternatives of energy resources. Although she is fortunate enough with her limited oil reserves - which might be depleted within 20 years - the nuclear energy option should be kept open, says Liek WILARDJO, without disregarding other existing power generating systems.

Still in the context of the energy problem, domestic oil price policy seems to be the pivotal factor of Indonesia's development program, since oil industry is the main source of her foreign exchange earnings. Accordingly Prijono TJIP-TOHERIJANTO tries to evaluate Indonesia's domestic oil price policy since controversies usually occur between the government and companies due to the problem of domestic oil price policy.

As a consequence Indonesia's development program will be successful if the country develops other sectors aside from that of oil. One of them is increasing her rice production. According to Alfian LAINS, rice production in Indonesia has shown an increasing trend but it has failed to meet the demands of increased consumption caused by the rapid population growth. Consequently, rice output should be increased by introducing and developing new rice technology in Java and through the expansion of cultivated rice areas outside Java. Moreover, more attention should be paid to dryland paddy through extensification and intensification programs - which should be introduced by the government - especially outside Java.

Another factor which should be taken into account is the management of the development of villages in Indonesia since almost 82 per cent of her population live in rural areas. These villages are varied in nature in terms of their socio-economic conditions, tradition structures, administration, level of

development and potentials. They are classified into three stages, i.e. traditional, transitional and more advanced villages. The ultimate goal of rural development programs in Indonesia is to reach the stage of the more advanced or modern village which is called PANCASILA village. For this purpose the management of the rural development programs should be properly amended, carefully planned and appropriately implemented.

Finally, to face the uncertainties of the 1980s, the peoples of the world in general, and those of Southeast Asia in particular, should look for ways to ameliorate the global situation. One of them is to strengthen cooperative ties with the neighbouring countries. To this end Mr. Richard WOOLCOTT, the former Australian Ambassador to Indonesia, has contributed an article. Mr. WOOLCOTT suggested that the Southeast Asian countries should know Australia better, and vice versa. Through deeper mutual understanding it is hoped that relationships between Southeast Asia, particularly the ASEAN countries, and Australia, would be strengthened so that Australia would accept Asian attitudes and situations, on the one hand, and Australia would be regarded as a natural friend, on the other.

THE SECURITY ASPECT OF ENERGY IN THE 1980S: AN INDONESIAN VIEW*

Pande Radja SILALAH

Energy is a very important and interesting topic to discuss about at the present time. Since oil accounts for the largest share of primary energy consumed today, changes in the oil situation have a global impact.

Decisions taken by the OPEC countries at the Geneva Conference at the end of May 1981 to cut production and maintain the price level such as has been agreed upon previously at the Bali Meeting in December 1980 have been anticipated although these decisions cannot yet be considered as a normal part of a long-term trend. In analysing the oil problem the time horizon, besides other factors, becomes the dominant factor and has to be taken into consideration.

It is too often that analyses of the energy problem, whenever linked to the problem of security, become blurred because of differences in time horizon.

This paper will confine itself to the security aspect and the effects of new developments in the world's demand and supply of energy with special emphasis on oil, in the present decade.

It is generally known that in the case of oil, scarcity has caused a process of reaching an equilibrium between supply and demand which is no longer determined merely by economic or market laws but has for quite a long time now become a politico-strategic matter tending to undergo politically-motivated changes. Therefore, the security problems become more prevalent. Whereas in the previous decades, particularly after the oil crisis in 1973, the oil problem

* Paper presented at the Eleventh International Conference, organized by the Korean Institute of International Studies, Seoul, June 18-20, 1981

has become one of the cores of the security problem, it might be pointed out that for this decade the situation will not alter too much.¹

When we look into the potentials within the mechanism of energy supply and demand at the present time, particularly after the energy crisis, one could say that its development has become difficult and it has become all the more impossible to project this development merely based upon data of the development of supply and demand during the last few years. In the past it was easier to make a projection because changes were more of a quantitative character. In this decade, however, the picture has changed. In the decades preceeding the 1970s the economic planners of energy usually did not face the problem of making estimates of the world needs of energy. Because, besides that there was certainty about the projection of real national income growth and the relatively stable relation between economic growth and energy need, the logic and concept that provide the basis for such development functioned nearly without interruption. The continuous down-turn of costs and the real price of oil, while on the other hand the real income rises rapidly, has sped up the aforementioned course of development. Supported by a physical logic, as implemented by the international companies, the mechanism of supply and demand has functioned smoothly. Through large-scale investments, the introduction of the principle of economies of scale and technological advancement, the comparative figure between reserves and production has been continuously up-graded. Besides, the international oil companies have almost controlled the entire mechanism.²

The changes occurring since the oil crisis in 1973 has made the projection of the energy supply and demand even more complicated. This is reflected by the estimates made by the experts concerning needs and supply of energy which undergo changes all the time.

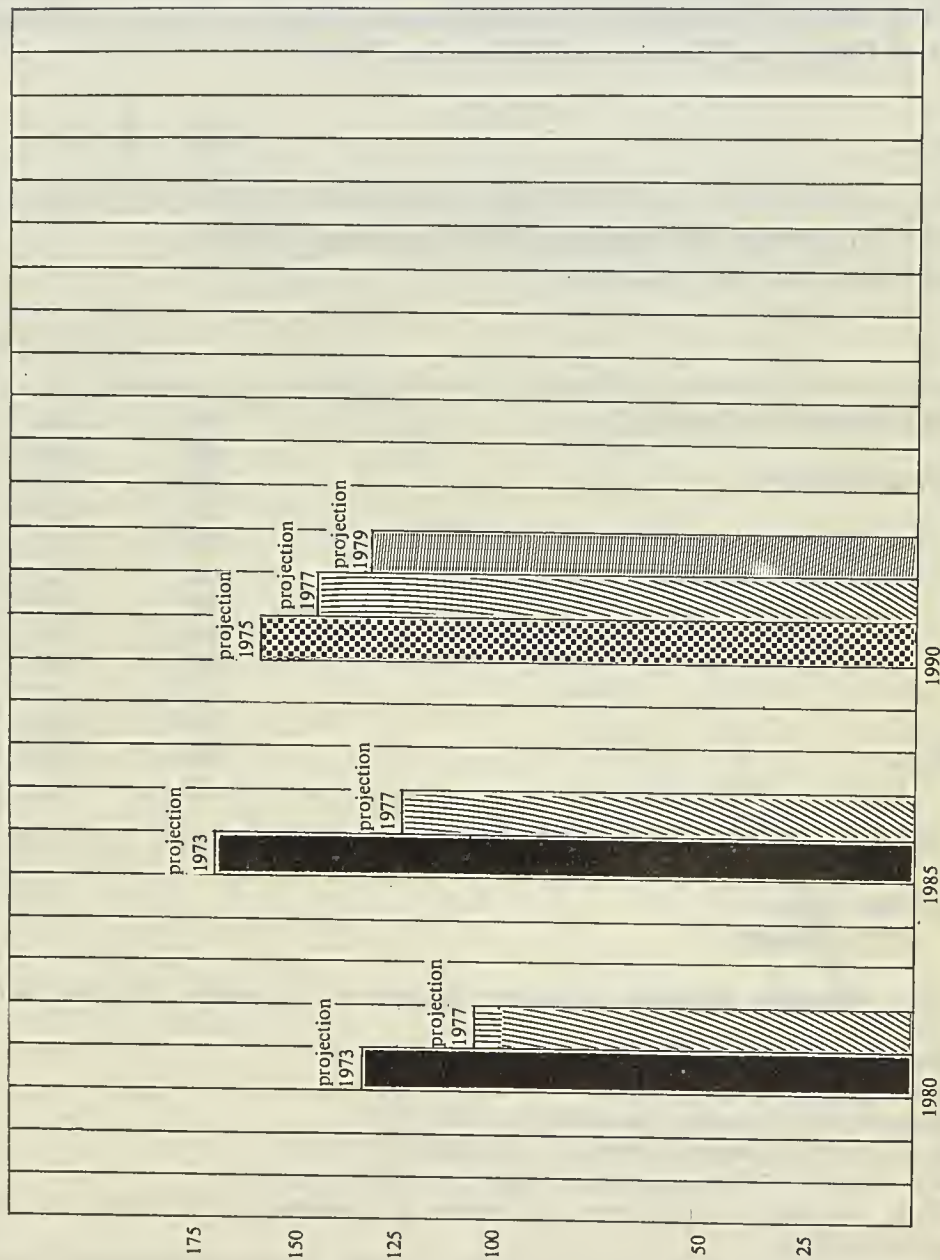
The estimates for the year 2000 is more than 22 per cent lower than the earlier one. This estimate is consistent with Exxon's recent forecast of world energy demand for the non-communist world.³ These changes occur because of the change in the assumption based upon e.g. the rate of population growth, economic growth, the efficiency of the use of energy, the conversion due to the price fluctuations, the management of resources and the allocation of the production, the problem of environment and political measures. The

1 Cf. Joseph S. Nye, Jr., "Energy Nightmares", *Foreign Policy*, Fall 1980, No. 80, p. 143

2 M. Hadi Soesastro, "Indonesia dan Petabumi Politik Energi Selama 30 Tahun Mendatang" *Analisa*, CSIS, Jakarta, August 1974, pp. 13-62

3 John P. Henry, Jr. and V. Eugene Harless and Jay B. Kopelman, "World Energy is Manageable Dilemma", *Economic Impact*, 1980/1, pp. 23-29

Figure 1 : DOWNWARD REVISION OF WORLD ENERGY SUPPLY PROJECTIONS*
(Million Barrels per Day Oil Equivalent)



* Excluding CPE's

Source: Exxon Background Series, *World Energy Outlook*, April 1979 and December 1979

estimates of energy supplies made in the years 1975, 1977 and 1979 for the year 1990 underwent quite significant changes (see Figure 1). Besides, the projection of several institutions or companies such as Shell Transport and Trading Co. Ltd., British Petroleum, U.S. Congressional Budget Office, U.S. Department of Energy and Exxon are different (see Table 1).

Table I

WORLD OIL SUPPLY AND DEMAND PROJECTIONS¹ BY SOURCE
(in million barrels per day, percentages)

Source	Projections 1990	
A. Shell Transport and Trading Co. Ltd.	SS ²	70.0
	SS ³	60.0
B. British Petroleum	SS ⁴	52.0
	SS ⁵	62.0
C. U.S. Congressional Budget Office	SS ⁶	64.6
D. U.S. Department of Energy	DD ⁷	52.8
	SS ⁷	55.3
	DD ⁸	59.9
	SS ⁸	62.4
	DD ⁹	59.9
	SS ⁹	62.4
E. Exxon	DD	60.0
	SS	59.0

Note: SS = Supply
DD = Demand

1. These projections post-dated the Iranian reduction of oil supplies. They also exclude CPE's.
2. Assuming business expansion.
3. Assuming Expansion is stymied.
4. Assuming OPEC countries maintain current production.
5. Assuming OPEC countries produce at maximum rates.
6. Assuming oil OPEC countries, except Algeria increase production.
7. These projections incorporate the effects of President Carter's July 15, 1979 energy initiatives.
8. The same assumptions as above (see footnote 7); the only assumption which differs is the one concerning the assumed level of OPEC production capacity.
9. These projections do not take into account the July energy initiatives, but do include Nuclear Energy Programme II (NEP-II) initiatives.

Source: Energy and Development: Increasing Third World Collective-Self-Reliance, Conference, Vienna 7-9 July 1980, pp. 5-6 (annexes)

WORLD ENERGY DEMAND-SUPPLY PROJECTIONS

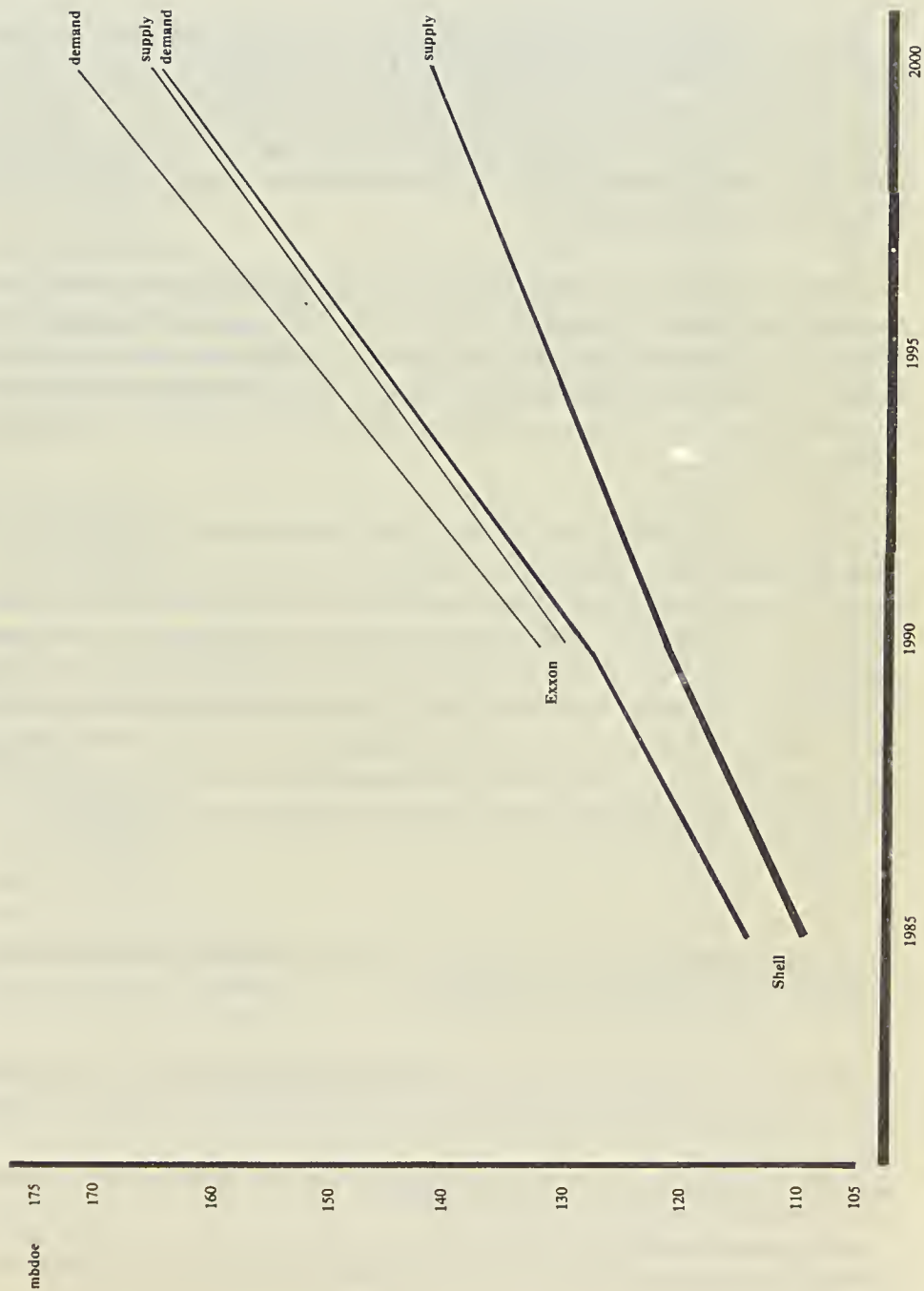


Figure 2

However, in the last few years, consensus among the energy experts seems to grow that the supply and demand of energy will be tight for the rest of the century. Although there will be a lower level of economic growth as compared to that in the previous decade (at least in the developed countries), the demand of energy will continuously rise.

It has been generally accepted that in the medium and long-term the gap between the amount of energy needed and the available supply will occur for several kinds of energy. This occurs mainly due to difficulties to divert the demand of oil to other sources of energy. According to the estimates of Exxon and Shell, the oil shares in the total consumption of world's energy amount to 38% and 50% respectively.⁴

Several studies have projected that the potential supplies could be sufficient to meet desired demand only up to 1985, or at the latest to 1990. Thereafter, there will be a big gap between the supply and demand of oil. Based on this forecast, Mana Saeed Oteiba, former President of OPEC could have stated that "the failure to fill the energy gap might cause the outbreak of World War III".⁵

The above statement can certainly not be separated from its time dimension. Although no big problem is likely to occur in the oil market -- if one looks at the present development and estimates for this decade -- it does not mean that its security implications become less prominent or can even be neglected. It could be said with certainty that the shortage of oil will reappear in the last two decades before the end of this century. Under this circumstance each country will attempt to deal with it already now and in this process would try to gain influence, particularly with regard to the superpowers within the territories of oil producing countries and transportation lines region.

THE INCREASING STRUGGLE AND RIVALRY OF GAINING INFLUENCE IN THE MIDDLE EAST

With the assumption that the oil shortage will occur in the coming decade, one can say the rivalry for influence over oil producing countries, particularly

4 Exxon, "World Energy Outlook", December 1979 and Shell Briefing Service, "Energy and the Investment Challenge", September 1979

5 Statement made during OPEC Seminar, Vienna, October 4, 1979, quoted by A. Arismunandar, "The Energy Outlook in Asia and the Pacific", in *Indonesia and Korea: The Next Decade*, CSIS, 1979, p. 103

Table 2

ESTIMATED WORLD OIL PRODUCTION THROUGH 1995 UNDER VARYING ASSUMPTIONS (quads per year)

	1975	1985	1995
<i>Optimistic Case</i>			
Total World Production	111.2	171.4	207.7
Total of Market Economies	87.8	131.0	153.6
OPEC Production	54.7	81.2	90.3
ARAB Production	33.5	56.6	67.0
Saudi Arabias Production	13.7	27.9	35.1
OPEC Share of Market Economies	62.3%	61.8%	58.4%
ARAB Share of Market Economies	38.2%	46.1%	43.4%
Saudi Share of Market Economies	15.6%	21.3%	22.8%
<i>Middle Case</i>			
Total World Production		174.9	216.7
Total Market Economies		134.5	162.6
OPEC Production		88.9	106.7
ARAB Production		61.2	82.0
Saudi Arabias Production		33.1	50.9
OPEC Share of Market Economies		66.1%	66.8%
ARAB Share of Market Economies		45.5%	50.4%
Saudi Share of Market Economies		24.6%	31.3%
<i>Pessimistic Case</i>			
Total World Production		176.5	222.0
Total Market Economies		136.1	167.9
OPEC Production		95.0	124.2
ARAB Production		67.7	96.0
Saudi Arabias Production		40.2	66.5
OPEC Share of Market Economies		70.0%	74.0%
ARAB Share of Market Economies		47.9%	64.2%
Saudi Share of Market Economies		29.5%	39.6%

Note: Production is assumed to equal the output needed to meet the demand of market economies.

Source: Johnson and Messick (1977), Quoted by Natural Research Council, U.S. Oil and Gas Prospects to 2010, *Economic Impact*, 1980/3, p. 23

Table 3

U.S. FOREIGN OIL CONSUMPTION

Years	Consumption (million of barrels a day)	Production (million of barrels a day)	Imports (million of barrels a day)	Imports (as a percentage of consumption)
1960	9.7	8.0	1.8	19.0
1962	10.2	8.4	2.1	21.0
1964	10.8	8.8	2.3	21.0
1966	11.9	9.6	2.6	22.0
1968	13.0	10.6	2.8	22.0
1970	14.4	11.3	3.4	24.0
1972	16.0	11.2	4.7	29.0
1974	16.2	10.5	6.1	38.0
1976	17.0	9.7	7.3	43.0
1979 (est)	19.0	10.0	9.0	47.0

Source: Robert Stobaugh and Daniel Yergin, "The End of Easy Oil", *Economic Impact*, 1980/3, p. 9

in the Middle East will increase. This rivalry will be mainly between the USA and the USSR. It is generally known that at least in this decade the Middle East will seemingly represent the biggest oil producing countries in the world (see Table 2). The great dependency of oil import (see Table 3) largely originating from unstable countries namely the Persian Gulf area, coinciding with the decrease of American military power as compared to the military strength of the USSR -- has attracted the American interest into the security aspect.

Many experts have put forward their opinion that the focus of U.S. policy in the 1970s was directed toward the effort of safeguarding the oil price and preventing them from rising, with neglecting the security of supply.⁶ This lack of interest of the U.S. was mainly caused by the confidence of the U.S. that it will successfully lessen its dependency on Middle Eastern oil imports by means of diversification of imports, conservation and discoveries of new sources of energy other than oil.

6 Joseph S. Nye, Jr., "Energy Nightmares", *op. cit.*

According to George Philip, the U.S. can import 50% of its oil needs in 1988 from Mexico and the rest can be imported from Venezuela, Nigeria and Indonesia to the extent that the U.S. can be fed from its dependency of Middle Eastern and North African oil.⁷

This view seems to be too optimistic. Mexico has a reserve of hydrocarbon which can be proven to be as much as 50 billion barrels of oil and potential reserve as much as 200 billion barrels. It is possible that Mexico will produce 7 million barrels a day at the end of the 1980s. However, considering the dangers of inflation, high cost economy and the problem of unemployment, it seems that Mexico is reluctant or afraid of taking steps in line with the optimistic view mentioned above.

There are also other factors that have encouraged the U.S. to put more emphasis on the security of oil supplies in the 1980s. Although the U.S. can lessen its dependency on Middle Eastern oil, it still will be faced with the reality of the close interrelation between its domestic and foreign policy. This means that the U.S. must view energy security in a broader context rather than on its national security. The U.S. will remain vulnerable, due to its military and economic interdependency with its allies, and as long as its allies are not able to lessen their dependency on oil imports from the Middle East. As an example, suppose Japan succeeds in its conservation and diversification efforts, her oil consumption share will only decrease from 71.2% in 1978 to 60% in 1985 and to somewhat less than 50% in 1990.⁸ Besides, according to the Congressional Budget Office of USA, the loss of Saudi Oil for a year in 1984 would cost US\$ 272 billion and furthermore according to Henry Rowan and John Weyant, the loss of all Persian Gulf oil could raise the figures to 17.6% of the gross national product for the U.S.; 23.3% for Europe; and 27.3% for Japan.⁹

For the Soviet Union, the Middle East has become increasingly important. Several reasons can be given here why the Soviet Union strongly desires to establish and reinforce or strengthen its influence in this area. Until now Russia is still able to export approximately 25% of its oil production. However, its capability to maintain this position for the years to come has become even more uncertain.¹⁰ The projection indicates that within the years

7 George Philip, "Mexican Oil and Gas: The Politics of A New Resource", *International Affairs*, Summer 1980, pp. 474-483

8 Setsuo Tagaki, "Japanese Energy Policy and Its Prospects", paper presented at the CSIS sponsored Seventh Indonesia-Japan Conference, Bali, September 5-7, 1979

9 Joseph S. Nye, Jr., "Energy Nightmares", *ibid.*

10 See, Hadi Soesastro, "New Dimension of Energy Management in the Asia-Pacific Region", *The Indonesian Quarterly*, Vol. VIII, No. 2, Jakarta, April 1980, pp. 39-60

to come Russia's production will reach its peak point and will then go down continuously. There are indications that the Samotlor field in Western Siberia, which provides approximately one fourth of Russia's output, will no longer increase its production. Eastern Siberia which possibly could be developed into the largest oil and gas production area is developing very slowly. Its bad climatic condition, the shortage of experts, capital and technology are the main reasons. Besides, the development or utilization of coal, nuclear energy as well as gas cannot be realized in the short time.

In 1976, the Soviet Union had a surplus which can be exported to an amount of about 2.8 million barrels a day, half of which was directed to East European countries. In 1985 the surplus will disappear, and in 1990 Russia is expected to import 2 million barrels each day. Those estimates have assumed that energy conservation measures will reduce consumption by 5% in 1985 and 10% in 1990. Soviet leaders were reported to have placed considerable stress on the implementation of conservation measures. It seems, however, that for the industrial sector this effort will proceed slowly because Russia's industry has been established on cheap energy and Russia's leaders do not seem to be willing to make radical structural changes in the economy.¹¹

Besides for reasons of production, it has often been pointed out that the Soviet Union is keenly interested in the oil from the Middle East because of the cheap prices. According to Edgar O' Ballance, the actual oil shortage is not too difficult a problem for the Soviet Union. The Soviet Union has plenty of oil reserves, namely 11.5% of oil reserves and 36.5% of gas reserves in the world. In fact Russia is seeking for and opening new oil field in Siberia, but those fields are located within the polar circle. This means that the cost of exploration, drilling and transportation will be high. The entire cost of obtaining Soviet oil from the Siberian fields will amount to US\$ 14 per barrel as compared to the production of off-shore oil in the North England which is US\$ 10 per barrel. On the other hand, oil represents an important commodity which brings in foreign exchange for the Soviet Union. This fund is utilized to gain influence in certain Third World countries.¹²

Although up to now the Soviet Union still maintains its position as an oil exporting country, the last several years have shown that Russia always pursued its intentions of establishing its stronger influence in the Middle East and in the oil traffic areas in particular. It is wellknown that about 20 million bar-

11 Tyrus W. Cobb, "The Soviet Energy Dilemma", *Orbis*, Vol. 23, No. 2, (Summer 1979), pp. 353-385

12 Edgar O' Ballance, *The Security of the Middle East Oil*, (London: Foreign Affairs Research Institute, 10/1979)

rels a day or 60% of the entire international oil trade and 40% of the total production of non-communist countries is produced in the Gulf area and transported through the Strait of Hormuz. By controlling the oil production in the Gulf area and the flow of oil through the Strait of Hormuz, Russia would be in the position to threaten several Western countries which are dependent upon oil. This means that Russia would be able to overrun those countries and force its will upon them.

With the assumption that the Soviet Union will become a net oil importing country, it will face difficulties and her economy will be vulnerable if it cannot provide hard currencies to pay for its import. The most predictable step that the Soviet Union would take to overcome this problem is to apply barter trade. But we may ask what kind of commodity does the Soviet Union prefer to exchange for its imported oil? Because of aforementioned reasons Russia would prefer controlling and influencing the oil producing countries, especially the Middle East countries. Since social disruptions in the Middle East which most probably will continue for some time, it is fairly possible that Russia will increase its activities in giving aid to the Tudeh (Iran's Communist) Party or several leftist movements in those areas for obvious reasons and goal.

According to Jonathan P. Stern, the Soviet Union has no intention of occupying the Persian Gulf area for at least two or three years to come. The reason he puts forward is that with a good management, Russia could fulfil her energy need and the needs of her allies (CMEA) without importing. Furthermore, he pointed out that Russia is the biggest producer country in the world with an estimated production of 586 million ton in 1979, as compared to Saudi Arabia with its 463 million ton and the U.S. with 463 million ton. In addition the Soviet Union produces gas and coal in considerably large quantities. Another reason is that since the incident in Afghanistan Soviet intention to occupy the Gulf area diminishes because of the most likely negative reaction from its neighbouring countries, particularly the Moslem Countries.¹³ In the same line, Robert W. Campbell pointed out that for the Soviet Union the door is still open for a possibility to lessen its dependency of becoming a net oil-importing country, namely through imports of technology, conservation and using the energy sources other than oil to run her economy.¹⁴

However, the possibility that Russia will get its capital and technology needs in the 1980s will increasingly diminish. With the Russian occupation of Afghanistan, the U.S. has shown a firm stand. As a reaction to such action, former President Carter put forward that, "an attempt by outside force to

13 Jonathan P. Stern, "Gulf Oil Strategy", *The Washington Quarterly*, Spring 1980, pp. 67-72

14 Robert W. Campbell, "Dwindling Energy", *The Washington Quarterly*, Spring 1980, pp. 58-66

gain control of the Persian Gulf region would be regarded as an assault on the vital interests of the U.S., and repelled by the use of any means necessary, including military force". This now became the so-called Carter Doctrine.¹⁵ In this connection William B. Quant pointed out: "If Iran were more stable, if oil were less vital to the west and if U.S.—Soviet relations were otherwise in good repair, the events in Afghanistan might have had limited impact on American concern for Persian Gulf." Furthermore he added that "one element of an effective American Middle East policy involves military power. During the Iran hostage crisis, it became common wisdom to declare that the post-Vietnam era had come to a close. Iran had supposedly convinced America that anti interventionist policy was inadequate, that military power could not be neglected, and that U.S. prestige must quickly be restored if vital interests were to be protected".¹⁶

As a reaction to the Soviet invasion of Afghanistan, former President Carter made an effort to speed up development of new heavy lift aircraft and fast logistic naval craft, and to acquire base facility in the Middle East region. Nevertheless such a step has been regarded by several observers as not adequate. As it was put forward by Amos A. Jordan, "..... what is needed now is to deploy American forces in or adjacent to the region. A carrier task force should be scheduled in the Indian Ocean on a continuing basis and Air Force plus Army or Marine contingents should be located as closely as possible. A build-up of facilities in the region is essential."¹⁷

In the U.S. presidential election campaign of last year the American policy about the Middle East became one of the main topics which has been debated sharply. From the results of the presidential election and from the public opinion polls in America, one gets the picture that the American people increasingly have been thinking of how serious the problem of oil security has become. The Reagan Administration increasingly shows that the U.S. in the near future will activate its effort to protect its interests in the Middle East. In a joint communique between President Ronald Reagan and the Prime Minister of Japan, Zenko Suzuki, on May 18, 1981 it was clearly shown that the U.S. would like to see the task to be shared with Japan. Japan is apparently expected to take over the navy's duty in the Western Pacific and to strengthen and enlarge its navy in order to protect the sea-lines of communications with the Middle East.

15 Walter J. Levy, "Oil and the Decline of the West", *Foreign Affairs*, Summer 1980, pp. 999-1015

16 William B. Quant, "The Middle East Crisis", *Foreign Affairs*, 1979, pp. 540-562

17 Amos A. Jordan, "Energy and National Security: Sizing Up the Risks", *The Washington Quarterly*, Vol. 3, No. 3, Summer 1980, pp. 154-163

From the abovementioned scenario it is clear that in the coming years the competition between the Soviet Union and U.S. over oil-producing areas and transport lines of oil will become increasingly stiff. As mentioned by Robert Stobaugh and Daniel Yergin, "an already serious energy problem has now become an energy emergency, an emergency that will persist throughout the entire 1980s".¹⁸

In this decade we will probably be faced by a series of major oil crises which might take any one or several of the following forms: the impact of fighting for control over oil resources among importing countries, especially between the superpowers; regional conflicts affecting the oil-producing area and/or conflicts between oil producing and importing countries; an economic-financial crisis in the importing countries; or internal upheavals in the Middle East.

THE SIGNIFICANCE OF OIL SECURITY FOR INDONESIA

Oil is a very important commodity for the Indonesian economy. Moreover it can be said that it is very difficult to imagine what would happen if in the coming years disruption would occur in its oil. Indonesia is an oil-producing country and belongs to the organization of petroleum exporting countries OPEC.

The role of oil in international trade and as a source of government revenues in the last ten years has become increasingly important, and it can be predicted that no significant changes will occur in the decade of the 1980s. In 1970 the export of oil and its products represent only about 40.28% of Indonesia's total export value. In 1979 this figure has reached to 56.90%. A similar picture can be seen on the import side. In 1970 the share of oil and its products in total import was only 1.48% but in 1979 increased to 11.01% (see Table 4).

From Table 5 we can see that until 1978 Indonesia's non-oil international trade has continuously suffered a deficit. The rise of oil prices in the 1970s has helped Indonesia's balance of trade to improve.

Government revenues depend largely on oil. In the fiscal year 1970/1971 government revenues from the oil corporation tax amount to about 14.80% of the total government revenues or about 20.76% of the total tax revenue. In the

¹⁸ Robert Stobaugh and Daniel Yergin, "Energy: An Emergency Telescoped", *Foreign Affairs*, 1979, pp. 563-595

Table 4

EXPORT AND IMPORT OF PETROLEUM AND ITS PRODUCTS AND ITS ROLE TO
TOTAL EXPORT AND IMPORT OF INDONESIA

Years	Value (US\$ million)		Percentage of Total	
	Export	Import	Export	Import
1970	446.3	14.7	40.28	1.48
1971	477.9	20.4	38.74	1.85
1972	913.1	30.3	51.36	1.94
1973	1608.7	43.8	50.10	1.61
1974	5211.4	183.0	70.17	4.76
1975	5310.8	253.5	74.77	5.32
1976	6004.1	437.7	70.24	7.72
1977	7297.9	732.0	67.24	11.75
1978	7348.6	579.7	63.11	8.66
1979	8870.8	793.3	56.90	11.01

Source: Biro Pusat Statistik, *Import by Commodity and Country of Origin*, Jakarta, 1979

Table 5

INDONESIA'S BALANCE OF TRADE (US\$-million)

Years	Including Petroleum and its products			Excluding Petroleum and its products		
	Export	Import	Balance	Export	Import	Balance
1970	1108	1001.5	106.6	661.8	986.8	- 325
1971	1233.6	1102.8	130.8	755.7	1082.4	- 326.7
1972	1777.7	1561.7	216.0	864.6	1531.4	- 666.8
1973	3210.8	2729.1	418.7	1602.1	2685.3	-1083.2
1974	7426.3	3841.9	3584.4	2214.9	3658.9	-1444.0
1975	7102.5	4769.8	2332.7	1791.7	4516.3	-2724.0
1976	8546.5	5673.1	2873.4	2542.4	5235.4	-2693.0
1977	10852.6	6230.3	4622.3	3554.7	5498.3	-1943.5
1978	11643.2	6690.4	4952.8	4204.6	6110.7	-1906.1
1979	15590.1	7202.3	8387.8	6719.3	6409.0	310.3

Source: Biro Pusat Statistik, *Import by Commodity and Country of Origin*, Jakarta, 1979

fiscal year 1981/1982 the share of oil corporation tax is expected to reach 61.69% and 71.13% in the total government revenue and of the total of tax revenue, respectively (see Table 6).

Like the other developing countries the needs of oil in Indonesia are constantly increasing. Within the last ten years oil consumption has risen with a figure of more than 10% per year.¹⁹ According to some studies the income elasticity of energy in Indonesia in the 1980s is approximately between 1.30-1.70.²⁰ With the expectation that the economy will grow with 6.5% to 7.0% a year, the need of oil will increase by about 8.45%-11.90% per year. From this rough estimate it could be said that without success to develop and to use energy sources other than oil, Indonesia will face difficulties in meeting her energy needs.

Table 6

INDONESIAN GOVERNMENT REVENUE (million Rupiah)

Fiscal Years	Oil Corpo- rated Tax Revenue	Total Government Revenue	Total Tax Revenue	(1) / (2)	(1) / (3)
	(1)	(2)	(3)	%	%
1970/1971	68818	465137	331493	14.80	20.76
1971/1972	112497	563548	400527	19.96	28.09
1972/1973	198885	748408	555999	26.57	35.77
1973/1974	344612	1171681	917923	29.41	37.54
1974/1975	973100	1985709	1687018	49.01	57.68
1975/1976	1249059	2733489	2131441	45.69	58.60
1976/1977	1619400	3689790	2787516	43.89	58.09
1977/1978	1948700	4308822	3391837	45.23	57.45
1978/1979	2308705	5301576	4074652	43.55	56.66
1979/1980	4259610	8077863	6507513	52.73	65.44
1980/1981 est.	6430100	10556900	8882500	60.91	72.24
1981/1982 est.	8575200	13900300	12055100	61.69	71.13

Source: Republik Indonesia, *Nota Keuangan, Rancangan Anggaran Pendapatan dan Belanja Negara*, 1975-1981

¹⁹ Cf. Wijarso, "The Energy Game: An Indonesian Version", *The Indonesian Quarterly*, Vol. 5, No. 3, CSIS, Jakarta, July 1977, pp. 34-45

²⁰ See, A. Arismunandar, "Indonesia Energy Outlook", paper presented during Technical Discussion on Energy, WFE0 Seventh General Assembly, Jakarta, 11-18 November, 1979; Lawrence H. Summers, "Demand Equations for Indonesian Oil", a report (unpublished) Jakarta, June 25, 1980; The Indonesian Institute of Engineers, "Background paper presented during Seventh General Assembly, Jakarta, 11-18 November 1979; T.L. Sankar, "Indonesia Energy Sector Study", Asian Development Bank, September 1980

Until now no precise data is available on the oil reserves in Indonesia. As an indicator, however, according to prediction made by Urs Dollinski and Hans-Joachim Ziesing which is based on a survey carried out in 1974, the Indonesian oil will be depleted in 29 years, as compared to Saudi Arabia in 55 years; Kuwait 88 years; Irak 50 years; Abu Dhabi 60 years; the People's Republic of China 52 years; Mexico 68 years and Oman 57 years.²¹ Therefore, within the next 10 years there is a big possibility that Indonesia will quite OPEC - as predicted by Mohammad Sadli.²² In 1980 Indonesia exports about 1.1 million barrels a day. The remaining 500.000 barrels are used domestically.

As an oil-producing country Indonesia is producing relatively small amounts. In 1980 Indonesia only produced 2.5% of total world's oil production and only about 5.78% of the production of OPEC. For comparison, Saudi Arabia produced about 16.1% of world's oil production and 36.92% of the production of OPEC. According to the latest data Saudi Arabia now produced 10.3 million barrels a day or more than 40% of OPEC production (see Table 7).

From what has been mentioned above it is clear that oil is significant for Indonesia. The price fluctuations, especially disturbances to the security of supply, could easily disturb the course of development or even could paralyse the Indonesian economy. The security factor of oil and its products becomes increasingly important, because part of the Indonesian needs has to be imported and another part of its production has to be exported. From Table 8 we can see that as much as 86.96% of the need of Indonesian crude oil is imported from Saudi Arabia, and on the other hand 52.12% and 26.41% of Indonesia crude oil are exported respectively to Japan and the U.S. This gives the pictures that the security of the traffic lanes of oil export and import has a great significance for Indonesia.

It has been mentioned above that for the years to come the U.S. ask Japan to play a bigger role in order to protect the sealines of communications to the Middle East and Japan's willingness in this matter was reflected in the Joint Communique between the American President and Japanese Prime Minister in May of last year.

How Japan would interpret its responsibility to protect the oil traffic lanes has attracted the attention of Indonesian and other Asian countries. If Japan

21 Urs Dollinski and Hans-Joachim Ziesing, "An Evaluation of the Availability of Crude Oil", *Aussen Politik*, Vol. 27, 1976, pp. 207-234, especially pp. 211

22 Mohammad Sadli, "Energy, Reforms and Third World Self Reliance", *The Indonesian Quarterly*, Vol. 3, No. 4, CSIS, October 1980, pp. 5-10

reinforces its defense forces to realize that goal -- and increase its naval activities in the waters of the oil traffic -- it can be anticipated that this will invite a keen rivalry between Japan and the USSR. This is not the situation that is favoured by Indonesia.

Table 7

WORLD OIL PRODUCTION* (1979-1980, 1000 ton)

	1979		1980		Change (%)
	Production	Share (%)	Production	Share (%)	
1. North America	564845	17.6	567000	18.5	0.9
- USA	178590	15.0	485000	15.8	1.3
2. Carribean Area	221398	6.9	240545	7.8	8.7
- Venezuela	122755	3.8	113000	3.7	- 7.9
- Mexico	80815	2.5	110000	2.6	36.1
3. Others Latin America	54625	1.7	56780	1.9	3.1
- Ecuador	10515	-	10000	-	- 4.9
4. Western Europe	108887	3.4	116665	3.8	7.1
- England	77854	2.4	80000	2.6	2.8
5. Eastern Europe & USSR	608251	19.1	625465	20.4	2.8
- USSR	586000	18.4	603000	19.7	2.9
6. Africa	293310	9.2	261025	8.5	-11.0
- Nigeria	113479	3.6	101000	3.3	-11.0
- Libya	98943	3.1	85600	2.8	-13.5
7. Middle East	1091858	34.3	956630	31.2	-12.4
- Saudi Arabia	475200	14.9	495000	16.1	4.2
8. Far East	248880	7.8	241515	7.9	- 2.8
- Indonesia	79137	2.5	77500	2.5	- 2.1
World Total	3189054	100.0	3065625	100.0	- 3.9
OPEC	1523954	47.8	1340830	43.7	-12.0

* Including condensat for USA, Canada and including NGL for Mexico

Source: *Petroleum Economist*, January 1981, quoted and modified by Bachrawi Sanusi, "Gambaran Minyak Dunia Tahun 1981", *Kompas*, February 19, 1981

Table 8

EXPORT-IMPORT OF PETROLEUM AND ITS PRODUCTS BY COUNTRY 1979

	Import				Export			
	Crude Petroleum		Petroleum Product		Crude Petroleum		Petroleum Product	
	Net Weight Ton	Value US\$ 1.000	Net Weight Ton	Value US\$ 1.000	Net Weight Ton	Value US\$ 1.000	Net Weight Ton	Value US\$ 1.000
Total	3529995	443392	2033766	3499910	60417683	8124220	-	-
- Japan	10000	8159	14707	7007	31492083	4154726	3780101	570215
- Hong Kong	-	-	6430	1469	-	-	-	-
- Trinidad & Tobago	-	-	-	-	5116930	420007	-	-
- South Korea	-	-	1595	555	-	-	-	-
- Rep. of China	-	-	5581	1673	524208	73660	-	-
- People's Rep. of China	-	-	10268	2872	-	-	-	-
- Thailand	-	-	302	64	40406	4162	747	31
- Singapore	364855	68074	933305	303245	6688705	929661	59913	1863
- Malaysia	-	-	5798	3499	-	-	-	-
- India	-	-	5	3	-	-	-	-
- Sabang	-	-	5	4	52896	5484	-	-
- Philippines	-	-	-	-	1092799	147858	600	21
- Saudi Arabia	3069846	355592	-	-	-	-	-	-
- Tanzania	-	-	2494	528	-	-	-	-
- Liberia	84610	16961	3556	752	-	-	-	-
- Australia	5356	1421	5866	2303	1014589	146565	-	-
- USA	2264	525	28754	18112	15956983	2195154	1700312	21170
- Canada	-	-	25	275	-	-	-	-
- Brazil	-	-	8	15	-	-	-	-
- United Kingdom	-	-	5510	2366	-	-	-	-
- Netherland	-	-	3646	2424	490980	52427	-	-
- France	-	-	99	53	-	-	-	-
- R.F. Germany	-	-	2330	1711	-	-	29507	167
- Belgia & Luxemburg	-	-	398	368	-	-	-	-
- Switzerland	-	-	22	72	-	-	-	-
- Sweden	-	-	6	4	-	-	-	-
- Italy	-	-	3025	764	-	-	-	-
- Tanzania	-	-	2494	528	-	-	-	-

Note: - data not available

Source: Biro Pusat Statistik, *Export by Commodity, Country of Destination and Port of Export*, Jakarta, 1979 and *Import by Commodity and Country of Origin*, Jakarta, 1979

On the other hand an intensification of the Japanese armed forces, at least in the few coming years, could create a situation which is not favourable for the Indonesian-Japanese relations, and most probably also with the other Asian countries, particularly between Japan and the ASEAN countries. It should be mentioned here that apart from other factors, history plays a role in this matter. It is still fresh in everybody's memory that the former Japanese Prime Minister was welcomed with demonstrations when he visited the ASEAN countries in January 1974.

Indonesia would rather like to see that the U.S. does not put too much pressure on Japan to immediately reinforce its armed forces, although this does not mean that Indonesia and the other ASEAN countries as well would not like to see their territorial waters secure and peaceful.

Consultation and exchange of ideas concerning this matter between the U.S., Japan and other Asian countries would be very important. By exchanging ideas it is hoped that security which all countries concerned would like to see in their areas will be realised, and the possibility of threat to the security of the supplies and the provision of the oil needs of those countries mentioned could be warded off.

The 1980 decade is full of uncertainties. One of them is already there in the form of uncertainty in the security of supply and the fulfilment of the energy needs, in particular the need of oil and its products for those countries which need them. This will occur principally because the level of energy scarcity which is different in each country, particularly when related to the needs of the respective country or groups of countries which have objectives which are not always alike, and are often conflicting one another.

The problem of oil (energy) and its security which in the previous decades has become the main problem in the world has now become a serious problem which will continue to exist during the 1980s.

NUCLEAR POWER AND THE ENERGY PROBLEM IN INDONESIA*

L. WILARDJO

Indonesia is one of the Third World's developing countries. While one cannot say that we are an oil-rich country like those in the Middle East, we are fortunate enough to have some oil, besides coal and the less abundant energy resources such as hydro and geothermal. Joint exploration between Indonesia and France has also found deposits of uranium in Kalimantan. So, we are in a somewhat better situation, insofar as the energy need is concerned, than those developing countries which have no oil. This does not mean, however, that we do not have energy problem, nor does it mean that a crisis is not inevitably forthcoming.

The over-optimistic estimate says that Indonesia's oil reserve is over 50 billion barrels. But the proven reserve is placed at only 2% of that of the World's.¹ With the World's proven reserve of 640 billion barrels² and with our annual production of 500 to 750 million barrels, Indonesia's proven reserve would have been dried out in 20 years.

We may try to make ourselves comfortable by passing this gloomy picture as "doomday-ish", and push the date out into, say, one and a half generations from now. This will take us to around the year 2025: Will we be able to hold on until then? And even so, would the World have become participatory enough to be willing to share the abundant solar and/or fusion energy among its population in the developed as well as developing countries, if that "ultimate" energy resource had eventually become harnessed and available at commercially competitive cost?

* A paper presented at the WCC-sponsored "Energy for My Neighbour" Conference in Chiangmai, Thailand, March 11-15, 1981.

1 The Deutsche Bank, 1978

2 *Oil and Gas Journal*, December 1978

I am afraid that the answer to these questions is not likely to be affirmative, especially if various conservation measures are not institutionalized and soon become our way of life. With domestic consumption of oil increasing at an annual rate of not less than 14%, half of Indonesia's oil production will no longer be available for export by 1990.³ Yet we can say that oil has been the backbone of Indonesia's development in the past decade, and is expected to remain so in the years to come. During the first eight months of 1980, revenues from oil and LNG exports increased by 51.93% (reaching US\$ 10.2 billion) and 116.26% (US\$ 1.87 billion), respectively, while those from non-oil exports by 4.7% (US\$ 4.6 billion) only.

This alone has served as clear enough a warning that we cannot cling to the false expectation of continued windfall gain from the oil bonanza. Unless export revenues from non-oil commodities (such as rubber, timber, tin, etc.) can be raised considerably, the growing domestic oil consumption which is bound to slump oil export in the coming years, will get the GDP rate of increase from over 7% which we have been enjoying down to a considerably lower figure. And for a densely-populated, poor country, the meagre growth would surely prove to be insufficient to support development efforts with political unrest and mounting criminality as probable consequences. The non-oil commodities are sensitive to price fluctuations in the international market due to fierce competition among fellow-producers and quotas/tariffs policies of the importing countries,-- a fact that calls for closer economic cooperation among the producers of raw materials and a relentless push by the Third World for a new and more equitable International Economic Order.

ALTERNATIVE ENERGY RESOURCES

Without wishing to de-emphasize the importance of the contribution of small-scale, decentralized, microhydro, wind and solar power generating systems, we think that in the future we will need more and more higher-capacity power systems to serve the increasing need of the big population of Indonesia. Despite serious efforts in the National Family Planning Programme the 1980 Sensus revealed that in the past ten years the population had increased at an average rate of 2.34% per year, -- higher than the under 2.1% rate of the previous ten years. And for a country with a present population of over 147 million people, it is quite an alarming figure! Even if (and this is a big "IF") the Family Planning Programme is successful in bringing the growth rate progressively down to the targetted figure of around 1.3% per year by the

3 Wijarso, Vice President of the state-owned oil company Pertamina, in an address to the International Petroleum Association, 1977

year 2000, the population which will not be less than 200 million by then will need at least 64 GWe. This is based on the assumption of a per-capita annual requirement of only 1,440 kWh⁴ -- a modest consumption by developing countries' standards, provided the distribution is not much too uneven between the affluent and the poor. The 64 GWe will comprise both the power in the state-owned power company PLN's grids and the captive power outside the PLN's.

Out of the 1.105 GWe used during the Second Five-Year Development Plan (ending in the fiscal year 1978), only 0.6%, 0.9% and 11.4% came from microhydro, geothermal, and hydro-powered generating units, respectively; the rest (87.1%) was produced in fossil-fuel-fired power plants. While the contribution from hydropower will certainly increase with the completion of "Jatiluhur" plant in West Java and "Asahan" plant (now under construction) in North Sumatra, heavy dependance on fossil fuels will remain. Already a 750-MW, coal-fired plant, the "Suralaya", at the western tip of West Java is under construction now. By 1990 when this steam-turbine driven plant is operating at its full capacity, some 12.5 million tons of coal from the Bukit Asam mines in Sumatra will be needed to keep the plant running.

The above consideration shows that we depend very much on fossil fuels, and yet such heavy dependance simply cannot go on, unless more and more highly-polluting coal-fired plants be built in Java, -- an island of 48,842 square miles already suffocating with almost 91.3 million people! Besides the mines at Bukit Asam, coal is also found in Bangka and Ombilin in Sumatra, in East and South Kalimantan, and in various places in South Sulawesi and Irian Jaya. But the coal from these other places is of a lower quality, being of lower calorific value and having higher water, sulphur and sodium contents. Moreover, Indonesia's coal reserve is estimated to be only slightly larger than its oil equivalent, being about 2.5 billion metric tons only.⁵ And, like oil, coal is a commercial energy resource. As such it will be exported too to get the foreign exchange that we need to finance the development of Indonesia. Recently following a meeting in East Malaysia between President Soeharto and Malaysia's Deputy Prime Minister, Mahathir Muhammad, Indonesia has agreed to supply coal for Malaysia's coal-fired power plants in the Malay peninsula.

4 At 1 kgce = 8 kWh, this is slightly less than 50% of the subsistence energy need of 400 kgce per capita, per year, but a factor of 2.5 should be allowed to account for the use of non-commercial energy resources, such as firewood and charcoal.

5 *Science*, Vol. 209, July 1980, p. 166

Energy farming is a possibility, at least outside of Java and Bali. At 22% of the estimated net annual primary production of 8.07 tons of coal equivalent per hectare, Indonesia's forest resources are equivalent to about 21.6 billion tons of coal. But reckless loggings by foreign holders of forest concessions have ruined considerable parts of Sumatra's and Kalimantan's forests. Besides there will be fiercer and fiercer competition with farming for food, and gasohol is not yet competitive with gasoline. In Java solar energy farming has no prospect at all because the island is already over-populated, deforested and plagued with perennial floods. The once fertile volcanic top soil has been eroded, and the land is "tired" after centuries of intensive cultivation by the Javanese farmers. Now the land will produce only if fertilizers are heavily used. Compost and cow dung are no longer sufficient, and tons of petro-chemically produced fertilizers must be made available by the government to the farmers on credit basis through the farmers' cooperatives.

For cooking in Java people have shifted more and more from the traditional fuel, the firewood, to kerosene and LPG, because firewood is getting scarce and expensive. The people in the southern part of Yogyakarta are even beginning to replace firewood with oil to keep the furnaces they use to get lime out of lime-stones (CaCO_3) burning. In Java lime is used as substitute or supplement of cement as construction material.

Scarcity of agricultural land on Java has resulted in the fact that the majority of the Javanese farmers are the so-called the subsistence ones, with small holdings as large as only 0.6 hectare per family with three children. The numbers of landless farm workers are also increasing, and so are those of hobos, drifters, and off-season odd-job seekers migrating from their villages to the urban areas.

Admittedly no serious efforts have been launched in attempting to convert urban garbage into methane gas. But that, while certainly desirable from the point of view of the cities' cleanliness and sanitation, would relieve but a fraction of the city people's need of cooking gas.

High-technology tappings of solar energy are still extremely expensive. Besides just like nuclear-fuelled or coal-fired power plants there are still a lot of uncertainties as to whether large-scale tappings of solar energy will not bring us adverse effects through local and global climatic changes.⁶ All this leads us to the consideration of the nuclear option.

⁶ Francis and Abrecht (ed.), *Facing up to Nuclear Power*, The Westminster Press, Philadelphia, 1975

NUCLEAR ENERGY

For the last few years there have been heated debates on nuclear energy. One such debate took place at the WCC (World Council of Churches) Conference at MIT (Michigan Institute of Technology) in 1979. The opponents of nuclear power, represented by Professor Jean Rossel and his followers, rejected this energy resource on the basis of both its safety and security risks. The proponents of nuclear energy, among others Professor David Rose of MIT, opted for it because its major contender as the World's near-future energy resource, the coal, was considered as not less expensive and much more damaging to the environment.

Both parties agreed on the urgency of implementing conservation measures but David Rose pointed out that such measures would only start to be effective after a few decades because there were different time perspectives involved and because societal changes would always be impeded by the society's inertia.⁷ Attempts to force the implementation of conservation measures all at once would be counterproductive because it would be more expensive than the saving expected from such drastic course of action.

We all agree that conservation is urgent and that it could ameliorate our energy problems and put the impending energy crisis off to a more distant future. We are also all for diversification of energy resources and decentralization of energy generating and distributing systems, when and where appropriate to the situation at hand. But we also recognise that urban areas and big industrial estates will continue to depend on the more efficient, dependable, centralized, capital-intensive power systems. This means that renewable energy resources such as microhydro, wind, biomass, tidal and solar energy will only serve to augment the conventional ones, especially during the peak-load hours. When the World's oil wells dry out, and if that happens before the "ultimate" energy source (which is either solar, or fusion, or both) is completely harnessed and available in abundance at reasonable cost, we must turn to either coal, or nuclear, or certain combination of the two energy resources.

Refraining from the argument about the desirability or the undesirability of nuclear energy vis-à-vis coal energy, we would therefore be wise to keep the nuclear option open. This will entail a cautious but serious efforts to acquire nuclear technology through international or bilateral cooperation with the developed countries, aimed, however, at gaining self-reliance in the technology. It also means a serious undertaking of fissile and fertile materials

7 David J. Rose, "Toward a Sustainable Energy Future", *Document # 10A, WCC Conference, MIT, 1979*

prospecting, in a joint operation with a technologically-advanced country, if necessary.

This, I believe, is precisely what the government of Indonesia is doing. It seems unlikely that the National Atomic Energy Institute will be able to keep its commitment to see to it that by the year 2000 about 27% of the energy need of Indonesia will be derived from nuclear power plants. At present we only have three or four reactors, and all of them are for isotopes activations, or for educational purposes only. The newest one, i.e., the "Kartini" in Yogyakarta, has been designed and built entirely by Indonesian scientists and engineers. Some of its parts were salvaged from a discontinued nuclear project, -- the "Serpong" project that, although has been fully paid by Indonesia, was so irresponsibly abandoned by the Russian contractors. It is of 250 kW capacity, but so far has only been operated around 50 kW. Save for the fuel (which is UZrH, enriched to 20% concentration of U-235, and supplied by a U.S. company) the design, construction and operation of the "Kartini" has demonstrated Indonesia's move towards self-reliance in nuclear technology.

The first real power reactor to be built at Lasem in the northern part of Central Java will be of about 35 MWe capacity -- a mere 5% of that of commercial power reactors now in operation in several countries. It will probably be a heavy-water-moderated PWR of the CANDU-type with non-enriched uranium as its fuel. Judging from the fact that its actual construction is not yet underway, and taking into account the up to ten years of lead time necessary before a power reactor becomes fully operational, this power reactor will not be commercially operational before 1990. This is what I would call cautiously keeping the nuclear option open -- a bit too cautious, in fact, I am afraid, considering the rapidly increasing population and the dwindling, heavily exploited oil and natural gas resources.

I would like to say in conclusion that we are not unaware of the not-too-effectiveness of IAEA as the international safeguards against nuclear arms proliferation. Yet as a good citizen of the World Community Indonesia has been willing to play along with the rules -- signing and ratifying the NPT, and all. We only hope that the six members of the Nuclear Club and those countries with advanced nuclear technology which could readily join it if and when they so wish, will be considerate enough to refrain from applying a double standard: one (the very lenient one) for themselves and the other (the one with too many and too strict restrictions) for the non-nuclear developing countries. Ignore this appeal, and do not be surprised to learn that the developing countries will soon lose their faith in the theme "Justice, Participation and Sustainability"...

INDONESIA'S DOMESTIC OIL PRICE POLICY

Priyono TJIPTOHERIJANTO

OIL AND THE STATE: AN INTRODUCTION

Most of the oil exporting countries are developing countries. Some of them are with relatively large population and low per capita income, notably Algeria, Bolivia, Colombo, Indonesia, Iran, Iraq, Nigeria and Saudi Arabia. Their population growth rates are relatively high, ranging between 2 and 3 per cent per annum. Indonesia's annual growth rate is 2.1 per cent and is estimated to reach 2.3-2.4 per cent in the future.

It is not surprising if these oil-exporting-countries usually spend large proportions of their oil revenues in large proportion on socio-economic development.¹ But they also have to be aware, that since petroleum is a depletable resource, they have to make hard efforts in these countries to diversify their economies. It is a reasonable suggestion because most of those oil-exporting countries belong to a group whose prosperity is generally affected by the export conditions of one or two commodities. For example, the desert countries, i.e. Kuwait, Qatar and Abu Dhabi -- depend almost completely on oil for their livelihood and prosperity.² Lucky for Indonesia, her economy is more diversified.

Since oil industry is Indonesia's main source of foreign exchange earnings it is becoming the pivotal factor of its entire development program. The revenue of Indonesia can be divided into two categories, vis. domestic revenue consisting of direct and indirect tax and foreign revenue in terms of revenue from oil export. The direct tax on oil sector comes from the taxes paid by *Pertamina*, the only state-owned-company, and the corporated tax paid by

1 United Nation, *Petroleum in the 1970's: Report of Ad Hoc Panel of Experts on Projections of Demand and Supply of Crude Petroleum and Products* (New York: U.N. Department of Economic and Social Affairs, 1974) p. 47

2 Zuhayr Mikdashi, *The Community of Oil Exporting Countries* (London: George Allen & Unwin, Ltd., 1972) p. 21

foreign oil companies. On the other hand, the indirect tax on oil is paid by domestic consumer of oil products.

Foreign revenue from the oil sector in terms of foreign exchange is used to finance Indonesia's import needs. However, Indonesia's oil sector has no effect on employment because it is a capital-intensive industry. Since Indonesia is considered as an agricultural country, most of the labor force are engaged in the agricultural or at least in the agriculturally-based industry.

This article put emphasis on the evaluation of the domestic oil price policy, since this problem usually becomes a crucial controversy between government and companies. These conflicts, as stated by Hirst,³ are lying on production, prices and profitability.⁴

DOMESTIC CONSUMPTION OF OIL PRODUCT

At first, let us look at the domestic consumption of oil products in Indonesia before proceeding to the discussion of oil pricing policy. Several aspects have been taken into account concerning the development of the domestic sales of oil products in the recent years. These can be seen from:

- a) the increasing trend in the domestic sales of oil products so that within a 6-year period consumption has nearly doubled, from 6.2 million kilolitres (KL) in 1970 to 12.3 million KL in 1975. This increase is partly explained by the improvements in the transportation system and the distribution of infrastructures, and the unbalanced energy usage structure which heavily stress on oil consumption, and
- b) the close connection between the development of implementation of the Pelita (Five Year Development Plan) and the growth in the usage of oil products. This means that the increased efforts and the successful implementation of the Pelita will also help to increase the usage of oil products.

The unbalanced energy-mix usage structure can be explained by Table 1, which shows the changes in the price of petroleum products.

The table shows that rapid increase in Diesel Oil consumption is due to rapid increase in public transportation which uses this kind of energy. It is also

3 David Hirst, *Oil and Public Opinion in the Middle East* (London: Faber and Faber, Ltd., 1966) pp. 44-45

4 Since Pertamina is state-owned-company, this controversy is not so strong. But it is different from conflicts between foreign oil companies and the government of the host-country. For further discussion, see: Appendix A

similar to Solar Oil consumption. This situation was reflected by 36.8 per cent change in solar oil's price during 1974-1975. Kerosene, as a consumption of the lower income groups, has increased from Rp 10,00 in 1972 to Rp 16,00 on April 1975. As an energy source for transportation, premium consumption has also increased though not as high as kerosene or diesel oil. The increase is due to the fact that premium gasoline is consumed only by the middle group who can afford to have cars.

Table 1

PRICE OF PETROLEUM PRODUCTS, 1972-1975
(in Rupiah per Liter)

Products	April 1972	April 1973	April 1974	April 1975	Changes in Prices (in %)		
					1972-73	1973-74	1974-75
Avgas	35	40	50	62	14.3	25.0	24.0
Avtur	30	40	50	62	33.3	25.0	24.0
Super 98	40	45	55	67	12.5	22.0	21.8
Premium	35	41	46	57	17.1	12.2	24.0
Kerosene	10	11.50	13	16	15.0	13.0	23.1
Solar Oil	14	16	19	22	14.3	18.7	36.8
Diesel Oil	8.50	9	13	19	5.9	44.4	46.1
Fuel Oil	6.50	7.50	12	19	15.4	60.0	58.3

Source: Computed from Pertamina, *Indonesian Oil Statistics*, 1975

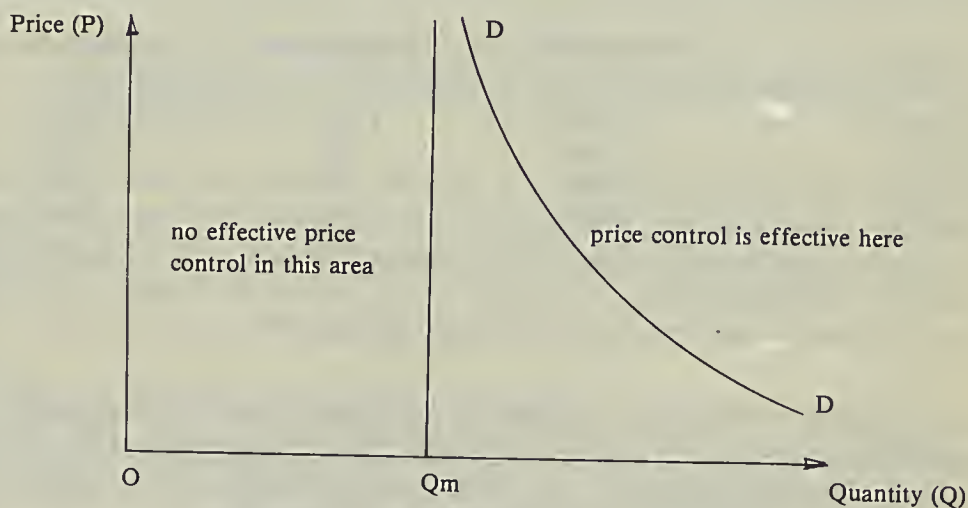
DOMESTIC PRICING POLICY: A SOURCE OF CONFUSION

Before going further to the discussion about Indonesian's domestic price policy of the oil products, it should be noted that price policies always mean different things to different people. The existence of the differences might be in the form of taxes or subsidies on certain products. Based on this standpoint we are going to evaluate pricing policy of Indonesia's domestic oil products.

Since the marketing of the oil product for domestic consumption is handled by a state-owned-company, *Pertamina*, it seems that this company has a monopoly in the product market. As a consequence, as the micro-

economic theory states, the price level at any period is greater than the corresponding level under free competition. Hotelling⁵ has shown that free competition equilibrium is consistent with maximization of public welfare, a monopoly is therefore non-optimal for social welfare. So it is a reasonable argument for Government to set an effective price control since it prevents the producer from charging a higher price even though the prevailing demand situation may permit the price to be higher than the prescribed limit. But an effective price control should be followed by measures of controlled distribution of the commodity.

From the theoretical base, since the demand for oil (as an energy source) is perfectly inelastic to the price in one part and fairly elastic in the other part; the price control will be effectively used only in that part where demand is elastic, as shown at figure below:



where: DD is demand curve for oil,
 (0-Qm) is a minimum essential energy demand.
 so the form of the demand function⁶ is as follows:

$$Q = Q_m + a \cdot p^{-n}$$

where: a is a parameter, and
 n is the price elasticity in the section to the right of Q_m (i.e. with regard to $Q - Q_m$).

⁵ Hotelling H., "The Economics of Exhaustible Assets" in *Journal of Political Economy*, April 1931, pp. 137-1975

⁶ For further discussion about oil's demand function and the size of price elasticity, see Hain Ben-Shahar, *Oil: Price and Capital*, (Massachusetts: D.C. Heath and Company, 1976) pp. 36-37

Now, let us discuss the price policy of Indonesian oil. For Indonesia the price of the exported crude oil is fixed by the government with regards to international market condition and the pricing policy established by OPEC countries. While the price of petroleum for domestic consumption is substantially subsidized, the price for Pertamina is determined by the level of cost of production.⁷

The amount of subsidy can be seen from table below:

Table 2

DIFFERENCES BETWEEN THE EXPORT PRICES AND WHOLESALE DOMESTIC PRICES FOR OIL PRODUCTS, 1974
(in US\$ per barrel)

Products	Export Price	Domestic Price	Differences
Kerosene	\$ 15.00	\$ 5.00	\$ 10.00
Solar Oil	13.50	7.30	6.20
Diesel Oil	12.70	5.00	7.70
Fuel Oil	14.00	4.60	9.40

Source: Computed from Pertamina, *Indonesian Oil Statistics*, 1975

From Table 2, if we examine the price of petroleum products in Indonesia, we tend to conclude that the price of kerosene, solar oil, diesel oil and fuel oil are relatively low. The policy to set a low price for domestic consumption is because those products are consumed by low income group.

Actually in practice domestic pricing policy of Indonesian's oil is divided into two categories: the price for oil products which are consumed by low income groups such as, kerosene, solar oil, diesel oil and fuel oil; and the price for products which are consumed by the middle and upper class such as, premium gasoline, super 98 and all kinds of aviation turbine fuel (ATF). The prices for the first category are subsidized while the price for the second category is (should be Author) taxed. Is that true? We will examine it in the discussion below.

⁷ See Appendix B

The study on petroleum product prices and tax components done by the Philippine National Oil Company (PNOC) showed the situation below.

Table 3

GASOLINE TAX, 1975
(in Philippines pesos)

Countries Premium Gasoline	Philip- pines	Korea	Taiwan	Hong- Kong	Indo- nesia	Japan	Malay- sia	Singa- pore	Thailand
Pump	1.50	3.43	2.77	1.93	1.26	3.33	2.01	2.30	1.35
Tax	.40	2.28	.46	—	*	.97	.84	1.03	.41

* Not available

Source: Department of Finance. To be noted that US\$ 1.00 = pesos 7.34 for the explanation and figure see: *The Times Journal*, Friday, January 21, 1976, (a newspaper circulated in Metro Manila), p. 11

Even if it shows that the cost per liter of premium gasoline is the lowest in Indonesia among the rest of Southeast Asian countries, this study, however, poses a big question of whether premium was taxed or subsidized by the Indonesian government. Since data on premium tax are not available for Indonesia, this figure will be still questionable.

The pricing policy of Indonesian's domestic oil has been changed since April 3, 1975. Following the weak position of Indonesia's financial condition due to the so-called "Pertamina's tragedy", the government had to raise the prices of her petroleum products for domestic consumption. The prices of these products were raised in order to remove or minimize the government subsidies on these commodities. According to the Government,⁸ this increase has wiped out the direct subsidy and was replaced by a small tax. Hence it was clear that starting from April 3, 1975 the domestic oil prices in Indonesia is *no longer* subsidized.

In my opinion this policy seems acceptable if (and only if) the government differentiate the pricing policy between the products which are consumed by the low income class and the products which are consumed by the middle or high income groups, as before April 3, 1975. It is not a popular policy, for

⁸ Dr. Wijoyo Nitiasastro's (the Chairman of Indonesia's National Planning Agency) report to the Parliament on June 25, 1975. Mimeo, unpublished.

example, to give the burden of tax to the poor who are consuming either kerosene, solar oil, fuel oil or diesel oil. There are two reasons in supporting this view. *Firstly* with regards to the economic situation in Indonesia as a developing country, it would be difficult to tap the poor for additional taxed on account of their already low level of income. It cannot be justified by the equity principle. *Finally* since this tax is in the form of indirect tax as for the stabilization program it can increase prices. This is a disadvantageous effect.

Considering those problems, with regard to the domestic pricing policy of Indonesian's oil, I like to submit a proposal for a new policy implication. It will be discuss in the following section.

POLICY IMPLICATION: A PROPOSAL

In conclusion of this paper some policy recommendations are suggested to meet the pricing problems of Indonesia's oil.

1. The prices of the petroleum products should cover up all the costs of production. In this sense it does not need a subsidy for those domestic prices. But for the products which are consumed by the low income group, it should *not* be taxed also. Then the government revenue from domestic consumption mostly comes from selling of oil products consumed by middle or high income groups. The consequences of this policy are:
 - a) because of the low prices of several products, i.e. kerosene, solar oil, diesel oil and fuel oil, it will not encourage the usage of another source of energy, i.e. natural gas. But it can be solved by another policy which is regulated by the balanced-usage of energy sources.
 - b) If these products, for example diesel oil and solar oil, are used by foreign companies (foreign capital investment industries) in their production to produce export goods, it looks like that the government give "a subsidy" to these industries. But as long as these industries are labor-intensive and produce domestic consumption goods, the subsidy can be treated as parallel to "tax-holiday".
2. In choosing the commodities, which prices are to be controlled (subsidized or taxed), there should be a prior perusal of: (a) price elasticity of demand; (b) the income elasticity of demand; (c) price elasticity of supply, and (d) the income elasticity of supply. These kinds of studies have never been done in Indonesia with regard to the domestic oil prices. So it seems that the policies of oil prices for domestic consumption are based on "a poor strategy". But it does not happen only in Indonesia. India is also

facing the same situation. As Subrata Gupta stated⁹: "the failure of the price control policy of the Government in a number of cases is perhaps due to not taking these elasticities into account."

APPENDIX A

The Nature of Conflicts

Conflict between foreign companies and the government of the host-country is usually over the following three aspects:* conflict over the shares of rent, over pricing policies and over the volume of production.

Conflict between companies and governments over the shares in total net revenue from resource operations occurs because surpluses over costs arise either from supply scarcities or from imperfections in the markets for the factors of production or the products.

The existence of imperfect markets for petroleum and minerals has resulted in serious conflict between the foreign companies and the host government over pricing policies. The host governments have an interest in the maintenance of high prices since the bulk of their revenues are derived from taxes on net earnings of the producing companies. For petroleum, the host governments have required the companies for tax purposes to compute net revenues on the basis of posted or reference prices which may be substantially higher than prices actually realized by firms in sales to consumers. However, in Indonesia realized price is used rather than posted price.

Conflicts over the volume of production may occur when the companies have an interest in equating marginal cost with marginal revenue on the basis of market mechanism. Since companies do not always have a free hand in allocating output disputes between companies and host government with respect to rates of production are quite common.

⁹ Subrata Gupta, "Aspect of Price Policy in India", in *The Indian Economic Journal*, No. 5, Vol. XXII, Conference number, 1974, p. 117

* Further discussion, see: Raymond F. Mikesell, *Foreign Investment in the Petroleum and Mineral Industries* (Baltimore: The John Hopkin Press, 1971), pp. 33-48

APPENDIX B

Theoretical Base of Oil Pricing

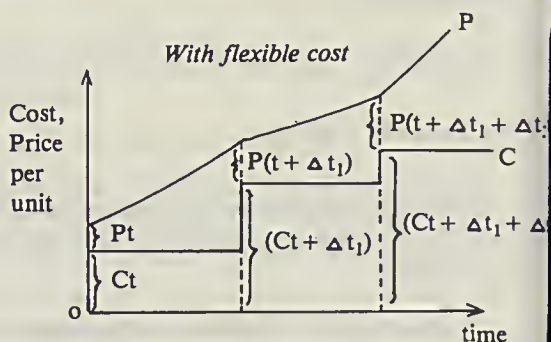
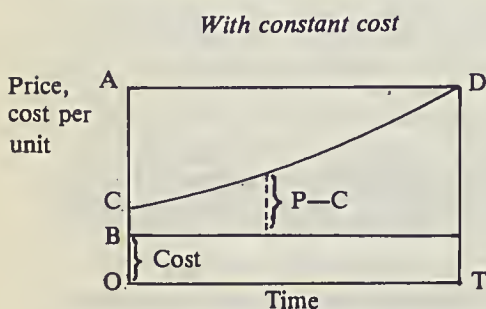
A. Price for Export

To the oil producing countries the posted price is the most important price since their revenues are based on it. The main function of the posted prices, therefore, was to serve as tax reference prices for both the producing countries and the oil companies in calculating the government oil revenues under the profit-sharing arrangement. There are different posted price for crudes, depending upon distances from the major markets and technical factors such as the sulfur content and gravity of the oil.

However, realized price policy is adopted in pricing Indonesia's crude oil rather than posted price policy. Indonesia's realized method is based on market analysis while posted price policy is determined by the OPEC countries.

B. Domestic Price

The price to *Pertamina*, a state-owned-company, is determined by the level cost of production. Theoretically, it should be as follows:



The essential conditions are:

- (i) that discounted net price be equal for all periods; $P_t - C = (P_0 - C) (1 + r)^t$; and,
- (ii) that deposit be exhausted when price brings quantity demanded to zero (OA in the diagram)

Where:

P = price of output
C = Cost per unit
T = Time span
r = rate of interest

The essential conditions are:

- (i) eventhough C increases between short periods, t , but in the long-run (it increased) it will lower than increases in P. and,
- (ii) Development cost per barrel can be calculated from equation below:

$$I_0 = C_0 = \int_0^t cqte^{-rt} dt^{**}$$

Where:

C = cost over the life of the reservoir,
r = rate of interest,
 I_0 = investment
 C_0 = development costs (production and exploration)
 q_t = production profile

** For excellent explanation of the development costs model, see: M.A. Adelman, *The World Petroleum Market*, (Baltimore: John Hopkins Press, 1972), pp. 48-77

REFERENCES

1. Adelman, M.A., *The World Petroleum Market*, Baltimore: The John Hopkins Press, 1972
2. Ben-Shahar, Haim, *Oil: Prices and Capital*, Massachusetts: D.C. Heath and Company, 1976
3. Gupta, Subrata, "Aspect of Price Policy in India", in *The Indian Economic Journal*, No. 5, Vol. XXII, Conference Number, 1974
4. Hirst, David, *Oil and Public Opinion in the Middle East*, London: Faber and Faber, Ltd., 1966
5. Henderson, James M. and Quandt, Richard E., *Microeconomic Theory: A Mathematical Approach*, Second Edition, Tokyo: McGraw-Hill, Kogakusha, Ltd., 1971
6. Hotelling H., "The Economics of Exhaustible Assets", in *Journal of Political Economy*, April 1931
7. Mikdashi, Zuhayr, *The Community of Oil Exporting Countries*, London: George Allen & Unwin, Ltd., 1972
8. Mikesell, Raymond F., *Foreign Investment in the Petroleum and Mineral Industries*, Baltimore: The John Hopkins Press, 1971
9. United Nations, *Petroleum in the 1970's: Report of Ad Hoc Panel of Experts on Projections of Demand and Supply of Crude Petroleum and Products*, New York: U.N. Department of Economic and Social Affairs, 1974

SOURCES OF OUTPUT GROWTH OF RICE IN INDONESIA REGIONALLY, 1967-1974*

Alfian LAINS

1. INTRODUCTION

Rice production has shown an increasing trend but rice demand in Indonesia is driven up by rapid population growth and the increased consumption as incomes rise. As a consequence, domestic rice production has constantly failed to increase as rapidly as demand. In 1975, the production of dry stalk paddy was 29.2 million tons or equivalent to about 14.6 million tons milled rice and consumption was estimated about 15.6 millions milled rice.

According to Mears, rice self sufficiency in Indonesia seems to be most uncertain given present rice programs and their implementation. On the basis of estimated annual population growth of approximately 2.35 percent and total income growth of 7.5 per cent (approximately 5 per cent per capita) and the National Development target of rice output growth of 4.4 per cent, he indicated that by 1985, the gap between consumption and net domestic production will be 0.3 million tons of milled rice at 0.3 income elasticity of demand, or 3.9 million tons at 0.5 income elasticity of demand. The gap will be bigger, however, if the output growth is 3.5 per cent, instead of 4.4 per cent. In this case the gap will be 2.2 or 5.8 million tons of milled rice at 0.3 or 0.6 income elasticity of demand, respectively.¹

* Originally, this paper is a chapter of the author's Ph.D. thesis entitled "Regional Concentration in Expansion of Rice Production in Indonesia", University of the Philippines at Diliman, 1978. The author wishes to thank Drs. Randolph Barker, Robert Herdt, L.S. Venkataramanan and F. Alburo for their comment on the early draft of this paper. Data used in this paper are adjusted figures. See the corresponding thesis chapter 2 and Alfian Lains, "Adjustment in Rice Production, Harvested Area and Yield Data in Indonesia", Discussion Paper No. FE-80-1, Faculty of Economics, Andalas University, Padang, February 1980 which was published in *The Indonesian Quarterly*, Vol. IX, No. 2, January 1981.

1 Leon A. Mears, "Indonesia's Food Problems, Pelita II/III", *Ekonomi dan Keuangan Indonesia*, 24 : 2 (June 1976), p. 102

To fill the gap between domestic rice consumption and rice production, Indonesia imported annually an average of 1.25 million tons of milled rice during 1973-1976, compared to about 0.7 million tons, on the average, during 1969-1972.

The annual growth rates of rice production were 4.5 and 3.6 per cent during 1967-1971 and 1971-1974, respectively, and dropped further to 1.4 per cent during 1974-1976. However, like other Asian rice producing countries today, expansion of cultivated land area under rice has ceased to be principal source of output growth in several parts of Indonesia, notably in Java-Madura and Bali. New land for rice is disappearing rapidly in Java and the rate of increase of harvested area on the outer-islands has been declining also during the past five years.

The purpose of this paper is to analyze the trend in production, harvested area and yield per hectare as well as sources of output growth of rice in Indonesia regionally during 1967-1974. Twelve out of 27 provinces in Indonesia are included in this study. The 12 provinces contribute 90 per cent of Indonesia's rice production utilizing about 85 per cent of the total area under rice cultivation. The corresponding provinces are Aceh, North Sumatra, West Sumatra, South Sumatra, Lampung, West Java, Central Java, East Java, South Kalimantan, South Sulawesi, Bali and West Nusa Tenggara.

2. TRENDS IN PRODUCTION, HARVESTED AREA AND YIELD OF RICE

Paddy production in the various provinces of Indonesia during the period being studied (1967-1974) was characterized by an increasing trend with Central Java and West Nusa Tenggara having the highest annual growth rate of 6.7 per cent for total paddy. The growth rate of production of wetland paddy in West Nusa Tenggara was second only to that in Lampung. On the other hand, dryland paddy had negative growth rate in all provinces except in Central and East Java (See Table 1).

The highest growth rate for total paddy production in Central Java and West Nusa Tenggara resulted from the high growth rate of yield per hectare of about 5 per cent per annum. In contrast, the highest output growth of wetland paddy in Lampung resulted from a high growth rate of harvested area of wetland paddy of 8.3 per cent during the same period.

In 1967, total production of paddy in Indonesia dropped to 18.5 million tons from 19.2 million tons in 1966. It dropped from 26.4 million tons in 1971

Table 1

ANNUAL COMPOUND GROWTH RATE PRODUCTION, AREA AND YIELD OF PADDY IN SELECTED PROVINCES OF INDONESIA, 1967-1971 AND 1971-1974*

Province	Total paddy			Wetland paddy			Dryland paddy		
	Prodn.	Area	Yield	Prodn.	Area	Yield	Prodn.	Area	Yield
1967 - 1971									
Aceh	5.0	3.7	1.4	5.4	3.8	1.6	0.4	2.6	0.1
North Sumatra	8.8	3.6	5.1	10.9	6.1	4.6	0.7	2.6	1.7
West Sumatra	4.5	2.2	2.3	5.5	3.3	2.1	-14.3	-9.8	-4.4
South Sumatra	3.2	0.7	1.4	5.6	4.3	2.1	-1.8	-2.81	0.2
Lampung	3.1	1.3	1.7	6.9	7.5	-0.6	-1.5	-1.7	0.3
West Java	6.7	2.1	4.5	7.4	3.2	4.1	-4.1	5.2	1.3
Central Java	9.5	1.9	7.4	9.7	2.1	7.4	-0.4	-3.1	3.1
East Java	5.2	1.7	3.3	5.2	1.8	3.3	3.8	0.1	3.6
South Kalimantan	5.4	2.0	3.3	6.4	2.6	3.7	-5.5	-1.9	-3.3
South Sulawesi	6.9	1.0	6.0	7.7	1.8	5.9	-6.0	-6.2	0.2
Bali	5.5	2.5	2.9	5.5	3.6	2.2	-8.1	-7.4	-1.0
West Nusa Tenggara	4.4	1.7	2.7	5.6	3.1	4.6	-8.2	-7.6	-0.7
Indonesia	6.3	1.8	4.4	7.2	3.9	4.6	-1.5	2.6	1.2
1971 - 1974									
Aceh	3.4	0.7	2.6	4.0	0.7	3.3	- 5.2	0.8	-7.7
North Sumatra	0.6	-1.5	1.4	1.7	0.9	0.8	- 6.5	- 5.4	-0.7
West Sumatra	3.7	0.2	3.5	4.1	0.8	3.3	-10.0	- 9.9	0
South Sumatra	5.4	0.5	4.8	7.3	4.8	2.1	0.7	- 3.2	6.5
Lampung	9.0	0.9	8.2	13.8	9.5	3.7	0.9	- 5.1	6.5
West Java	4.7	1.8	3.0	5.2	3.0	2.3	- 6.5	- 9.3	3.3
Central Java	3.2	0.9	2.3	3.2	1.0	2.3	2.1	- 1.8	4.0
East Java	4.6	2.3	2.3	4.8	2.6	2.1	- 1.5	- 2.4	0.9
South Kalimantan	6.7	3.1	3.7	7.7	4.7	3.1	- 8.1	-11.2	3.3
South Sulawesi	1.1	-1.2	1.9	1.6	0.2	1.3	-14.0	-16.2	2.6
Bali	3.8	0.6	3.2	3.6	0.3	3.4	9.3	4.2	5.0
West Nusa Tenggara	9.9	1.7	8.0	10.7	2.3	8.3	- 3.6	- 4.4	0.9
Indonesia	4.1	1.1	3.0	4.6	3.3	2.4	- 1.9	- 4.4	2.7
1967 - 1974									
Aceh	4.3	2.4	1.9	4.8	2.4	2.3	- 2.8	1.8	-3.3
North Sumatra	5.2	1.4	3.5	6.9	3.8	3.0	- 3.3	- 3.8	0.7
West Sumatra	4.2	1.3	2.8	4.9	2.2	2.6	-12.5	- 9.8	-2.6
South Sumatra	4.2	0.6	3.5	6.5	4.5	2.1	- 0.7	- 3.8	2.8
Lampung	5.6	1.1	4.4	9.8	8.3	1.2	- 0.5	- 3.1	2.9
West Java	5.9	2.0	3.8	6.5	3.1	3.3	- 5.1	- 7.0	2.1
Central Java	6.7	1.5	5.2	6.9	1.7	5.2	0.6	- 2.5	3.5
East Java	4.9	2.0	2.9	5.0	2.2	2.8	1.5	- 1.0	2.4
South Kalimantan	5.9	2.5	3.5	7.0	3.5	3.5	- 6.6	- 6.0	-0.5
South Sulawesi	4.4	0.1	4.2	5.0	1.1	3.9	- 9.5	-10.6	1.7
Bali	4.7	1.7	3.0	4.9	2.2	2.7	- 1.0	- 2.6	1.0
West Nusa Tenggara	6.7	1.7	4.9	7.7	2.7	4.4	- 6.3	- 6.2	0
Indonesia	5.4	2.3	3.0	6.1	3.6	3.7	- 1.7	-3.4	1.8

* Computed based on the five year average centered on the years shown, using the formula $g = \left[\frac{x_t}{x_0} \right]^{1/t} - 1$

to 25.4 million tons in 1972. The decrease in rice production during those years resulted from a long drought in several provinces, notably in Java, as well as Central and southern parts of Sumatra. The increase in production of paddy in the remaining provinces did not balance the production decrease in Java and several parts of Sumatra during the same period.

The yield per hectare of total paddy grew in excess of 2 per cent per year in all provinces except Aceh. Central Java had highest rate, followed by West Nusa Tenggara and Lampung. Lampung had the lowest growth rate of wetland paddy yield, 1.2 per cent, while other provinces had growth rates in excess of 2 per cent. Moreover, some provinces, i.e. Aceh, West Sumatra and South Kalimantan had negative growth rates of yield of dryland paddy during 1967-1974.

Based on the five years average centered on the years indicated, the absolute per hectare yields of paddy in Aceh as well as North and West Sumatra were not lower than those in West and Central Java in 1967 (Table 2). In 1974, however the yield per hectare in Aceh and North Sumatra were higher than that in West Java.

Table 2

YIELD PER HECTARE OF TOTAL PADDY IN SELECTED PROVINCES OF INDONESIA
(quintal)*

Province	1967	1971	1974
Aceh	34.5	36.4	39.4
North Sumatra	29.6	36.1	37.6
West Sumatra	29.5	32.2	35.7
South Sumatra	19.5	21.5	24.8
Lampung	19.4	20.8	26.3
West Java	28.2	33.6	36.7
Central Java	26.9	35.8	38.3
East Java	33.1	37.7	40.4
South Kalimantan	19.1	21.7	28.2
South Sulawesi	24.3	30.7	32.4
Bali	35.2	39.4	43.3
West Nusa Tenggara	23.3	25.9	32.6
Indonesia	27.8	32.1	34.1

* Five year average centered on the years shown.

Table 3

SUMMARY OF PADDY YIELDS AND ANNUAL COMPOUND GROWTH RATE OF PADDY YIELDS IN SELECTED ASIAN COUNTRIES

Country	Paddy yield (t/ha) ¹		Annual growth rate (%) 1965-1973
	1965	1973	
Pakistan	1.5	2.4	6.4
Sri Lanka	1.9	2.3 ²	2.4 ³
Philippines	1.3	1.6	2.2
India	1.5	1.7	1.9
Korea, Rep. of	4.3	4.9	1.8
Malaysia (West)	2.5	2.9	1.7
Burma, Union of	1.6	1.7	0.7
China, Rep. of	3.9	4.0	0.5
Bangladesh	1.7	1.7	0.5
Thailand	1.9	1.9	0.2
Taiwan	3.9	4.1 ⁴	

¹ Five year moving average centered on the years shown

² Average for 1970-1974

³ Annual compound growth rate for 1965-1972

⁴ Average for 1969-1973

Source: Randolph Barker, Sumalee Apiraksirikul and Donato Antiporta, *Source of Output Growth in Asian Food Grains*, Table 2 and 7

Before 1970, only South Kalimantan produced yield per hectare of total paddy below 2 tons while after 1970 all provinces had yields in excess of 2 tons. The highest yield of 3.5 tons in 1967 and of 4.3 tons in 1974 were from Bali. Yields of paddy in most provinces of Indonesia were higher than the national average of most countries in Asia, except Japan, Republic of Korea and Taiwan either before or after 1970 (see Table 3). However, as indicated in Table 4 the actual yield achieved by farmers were much lower than those achieved in experimental plots.

There was an increasing trend in harvested area in all provinces during the period being studied. However, the area growth rate of total paddy in the outer-islands (except Aceh and South Kalimantan) were no higher than those in the inner-island during the same period. For wetland paddy, Lampung with

Table 4

ACTUAL AND POTENTIAL YIELD OF WETLAND PADDY IN SELECTED PROVINCES OF INDONESIA
(kilograms/ha)

Province	Actual Yield (1976)	Potential yield in experimental plots*
Aceh	4223	4741
North Sumatra	4320	4741
West Sumatra	3893	4629-5627
South Sumatra	3173	6176
Lampung	4244	4744
West Java	4117	4629-6176
Central Java	4077	4629-6176
East Java	4321	4629-6176
South Kalimantan	2471	4629
South Sulawesi	3740	4629-6176
Bali	4517	4741-6176
West Nusa Tenggara	3721	4629

* Farmers' fields were taken as experimental plots

Sources: 1) Actual data from the Central Bureau of Statistics, Jakarta
2) Potential yields (except for Aceh, South Kalimantan and West Nusa Tenggara) from the Department of Agriculture, Directorate of Agricultural Technique, Directorate General of Agriculture, Jakarta, *Report on Fertilizing Examination of Wetland Paddy during the 1970/1971 Wet Season* (in Indonesia), n.d. The potential yield in Aceh was assumed to be equal to that in North Sumatra while those in South Kalimantan and West Nusa Tenggara was assumed to be equal to the lowest potential yield achieved in South Sulawesi.

8.3% during 1967-1974, had the highest growth rate of area, followed by South Sumatra with 4.5 per cent. West and East Java experienced 2 per cent while Central Java had 1.5 per cent growth rate of acreage during the same period.

The high growth rate of harvested area of wetland paddy in Lampung and South Sumatra resulted from opening up new wet rice field by increased numbers of transmigrants from Java and Bali. According to the data from the Department of Transmigration and Cooperative, Jakarta, there were 11,314 families or 51,920 persons who transmigrated from Java and Bali to the provinces of outer island in 1972-1973 while they were only 3,933 families or

17,848 persons in 1969-1970. About 50 per cent of them were resettled in South Sumatra and Lampung.

In order to identify the change in growth rate, the period being reviewed is divided into two sub-periods, namely 1967-1971 and 1971-1974.

From Table 1 we can see that the pattern of growth in output differs considerably from province to province just as in the case of the yield trends. Except in South Sumatra, Lampung, South Kalimantan and West Nusa Tenggara, there was a slackening in the production growth of total and wetland paddy in the later period compared to the earlier one. The annual output growth rate decreased in North Sumatra, Central Java and South Sulawesi between the two periods. In contrast, however, the output growth rate increased in Lampung and West Nusa Tenggara in the later period. In the case of dryland paddy only Aceh and East Java had positive growth rates of output during 1967-1971, but in the later period only South Sumatra, Lampung, Central Java and Bali experienced positive output growth. Note, however, that the growth rates of output of dryland paddy in South Sumatra and Lampung were lower than one per cent per year during 1971-1974.

With regards to yield growth rate, all provinces in Java together with North Sumatra and South Sulawesi had lower growth rate of yield of total paddy and wetland paddy in the later period. In North Sumatra, Central Java and South Sulawesi, the rates in the later period were only about 30 per cent of those in the earlier period, while the rates in West and East Java decreased by about 30 per cent during 1971-1974 compared to those during 1967-1971. In the case of dryland paddy, only three provinces, namely, Aceh, North Sumatra and East Java experienced smaller yields growth rate and even they were negative in the two provinces in the later period.

Turn now to the change in growth rate of harvested area, most provinces being studied (except East Java and South Kalimantan) all experienced lower growth rates for total paddy during 1971-1974 compared to those in 1967-1971. In addition to East Java, only South Kalimantan, South Sumatra and Lampung had higher area growth rate of wetland paddy in the later period. Further, only Aceh and East Java had positive growth rates of dryland paddy area in the earlier period but it was only 0.1 per cent in East Java. It dropped from 2.6 per cent in the first period to 0.8 per cent in the later period in Aceh but increased in Bali from 7.6 per cent during 1967-1971 to 4.2 per cent during 1971-1974. The remaining provinces still had negative area growth rate of dryland paddy in the later period.

The reasons for the decrease or increase in growth rate of production differ among provinces. For example, the sharp decline in Central Java was accom-

Table 5

ET RICE FIELD, IRRIGATED RICE FIELD AND HARVESTED AREA OF WETLAND PADDY
N IRRIGATED LAND IN SELECTED PROVINCE OF INDONESIA*

Province	Wet rice field (sawah)			Irrigated rice field		
	(ha)			(ha)		
	1967	1971	1974	1967	1971	1974
h	119,535	130,484	139,348	56,501	60,893	64,412
North Sumatra	242,049	271,173	295,292	119,399	127,013	133,040
West Sumatra	116,344	137,273	155,404	74,934	88,049	99,171
South Sumatra	123,155	134,790	144,232	28,685	30,339	31,655
Bandung	70,628	79,221	86,345	39,890	42,066	44,017
East Java	815,243	842,911	864,278	521,158	530,245	537,165
Central Java	796,845	806,804	813,941	465,565	460,986	457,583
West Java	988,139	1,086,533	1,166,702	703,931	797,484	875,730
South Kalimantan	119,205	133,256	144,871	10,443	15,952	21,918
South Sulawesi	284,250	424,925	574,475	142,964	246,885	431,916
	80,050	87,724	93,959	78,215	85,342	91,109
East Nusa Tenggara	141,435	144,942	147,630	106,699	111,384	115,032
Indonesia	4,447,050	4,850,458	5,176,857	2,581,724	2,833,979	3,039,236

Province	Irrigation ratio ¹			Harvested area of wetland paddy on irrigated rice field (ha)		
	1967	1971	1974	1967	1971	1974
h	0.47267	0.46667	0.46224	81,087	92,773	93,938
North Sumatra	0.49328	0.46838	0.45054	154,654	186,058	183,962
Sumatra	0.64407	0.64142	0.63815	134,929	152,797	155,524
South Sumatra	0.23508	0.22508	0.21947	35,666	40,771	45,784
Bandung	0.56479	0.53100	0.50978	35,546	44,602	56,174
East Java	0.63927	0.62906	0.62152	978,108	978,230	1,054,443
Central Java	0.58426	0.57137	0.56218	640,676	681,909	691,760
West Java	0.71238	0.73397	0.75060	750,440	831,776	919,324
South Kalimantan	0.08761	0.11971	0.15129	15,960	24,162	35,028
South Sulawesi	0.50295	0.58101	0.75184	204,553	253,860	330,312
	0.97708	0.97285	0.96967	119,861	137,371	138,177
East Nusa Tenggara	0.75440	0.76847	0.77919	128,888	131,292	142,622
Indonesia	0.58055	0.58427	0.58708	3,221,424	3,775,748	4,176,088

ave year average centered on the years shown.

defined as ratio of irrigated rice field to total amount of wet rice field

2: Wet and irrigated rice field are estimated from the results of two agricultural censuses in 1963 and 1973. Harvested area of wetland paddy on irrigated area is estimated as the product of ratio irrigated to the wetland rice field with harvested area of wetland paddy.

panied by a decrease in irrigated land area (Table 5) and an increase in fertilizer use (Table 6). However, in North Sumatra and South Sulawesi - the provinces which experienced sharp decrease in output growth rate -- and other provinces with declining output growth rate, the decline in output growth was accompanied by an increase in irrigated land area and fertilizer use per hectare. The increase in irrigated land area and fertilizer used was also noted in the provinces with increasing output growth rate in the later period. However, the land devoted to modern high yielding varieties has increased in all provinces during 1971-1974 compared to 1969 - the first year of modern varieties adopted widely in Indonesia (Tables 7 and 8). Area planted to modern varieties was only about 226 thousand hectares in Indonesia in the wet season 1968/1969 and it increased to 2.2 million hectares in the wet season 1975/1976. Adoption of modern varieties has been encouraged by the Bimas Baru (New Bimas) program but about 80 per cent of the Bimas Baru area has been located in Java.

In line with the expansion of the Bimas program, fertilizer consumption (NPK) for rice has increased rapidly in Indonesia. In East Java, the level of fertilizer input was more than double in 1974 compared to 1971 while it tripled in

Table 6

FERTILIZER (NPK) CONSUMPTION FOR RICE IN SELECTED PROVINCES OF INDONESIA*

Province	Total amount (ton)			Per hectare (kg)		
	1967	1971	1974	1967	1971	1974
Aceh	1,540	3,453	5,186	9,0	17,4	25,5
North Sumatra	2,834	6,968	10,463	9,0	17,5	25,6
West Sumatra	1,473	3,644	4,844	7,0	15,3	19,9
South Sumatra	731	2,391	3,766	4,8	13,2	18,1
Lampung	289	1,094	1,987	4,6	13,0	18,0
West Java	26,421	58,408	94,773	19,2	37,6	55,9
Central Java	15,998	45,675	65,430	14,6	38,3	53,2
East Java	32,275	66,723	92,944	30,6	58,9	75,9
South Kalimantan	-	93	652	-	0,5	2,8
South Sulawesi	779	2,396	4,599	1,9	5,5	10,5
Bali	413	990	2,846	3,4	7,0	20,0
West Nusa Tenggara	513	1,212	3,821	3,4	7,1	20,9
Indonesia	86,758	202,182	305,403	15,6	31,3	42,9
Java	76,106	175,586	259,834			

* Five year average centered on the years shown, computed based on the figures from the Department of Agriculture, Republic of Indonesia

Table 7

PLANTED AREA OF PADDY TO MODERN HIGH YIELDING VARIETIES IN DRY SEASON IN
SELECTED PROVINCE OF INDONESIA, 1969-1976 (ha)*

Province	1969	1970	1971	1972	1973	1974	1975	1976
Aceh	3,806	4,094	6,725	14,803	11,038	9,192	2,902	15,570
North Sumatra	6,093	24,520	38,717	60,969	68,241	36,454	16,798	23,170
West Sumatra	48,446	27,806	34,153	40,811	61,217	48,137	39,799	50,313
South Sumatra	170	280	2,130	2,977	2,606	6,301	3,448	2,915
Lampung	1,729	3,458	5,172	11,940	13,032	9,760	12,672	9,925
West Java	119,615	70,883	109,846	188,411	328,966	342,284	397,451	457,029
Central Java	49,793	33,097	50,918	74,414	128,528	189,237	174,782	185,172
East Java	61,038	31,112	88,959	100,890	160,934	239,347	195,800	253,040
South Kalimantan	-	150	4,018	8,703	8,699	9,363	5,056	19,184
South Sulawesi	9,300	35,155	47,141	10,158	57,027	37,983	42,614	68,894
Bali	155	196	2,068	5,999	17,223	37,423	31,648	37,529
West Nusa Tenggara	373	-	-	-	3,175	256	142	612
Indonesia	305,599	246,210	415,775	516,121	910,289	1,044,566	1,008,050	1,183,380

* Dry planting season is considered from October 1 to March 31

- Indicates that there is no report

Source: Bimas Organization, Jakarta

Table 8

PLANTED AREA OF PADDY TO MODERN HIGH YIELDING VARIETIES IN WET SEASON IN
SELECTED PROVINCES OF INDONESIA, 1968/1969-1975/1976 (ha)*

Province	1968/69	1969/70	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76
Aceh	-	3,889	9,123	21,158	15,073	33,686	11,188	12,559
North Sumatra	51,853	2,336	21,436	54,720	56,132	51,782	39,134	33,846
West Sumatra	8,388	28,182	47,170	44,747	74,805	73,558	46,591	42,066
South Sumatra	126 ¹	779	1,829	2,102	4,320	4,468	7,061	4,011
Lampung	-	9,230	3,512	12,380	21,284	19,571	30,687	25,855
West Java	58,074	193,286	150,750	212,440	390,933	621,110	627,749	660,895
Central Java	49,963	54,892	96,304	113,230	223,591	397,381	478,011	444,547
East Java	50,709	179,142	260,203	319,245	449,614	744,372	746,755	695,237
South Kalimantan	-	1,498	4,178	11,377	37,236	38,340	49,724	40,171
South Sulawesi	-	37,871	30,099	79,739	71,135	54,757	46,223	54,023
Bali	-	-	770	5,976	17,292	34,745	43,744	49,375
West Nusa Tenggara	287	52	130	-	606	22,708	21,844	24,436
Indonesia	225,968	525,647	656,407	917,152	1,411,821	2,190,484	2,259,100	2,208,811

* The wetplanting season is considered from April 1 to September 30

¹ Including Bengkulu

- Indicates that there is no report

Source: Bimas Organization, Jakarta

Table 9

ESTIMATED SHARES IN PADDY OUTPUT ATTRIBUTED TO AREA AND YIELD IN SELECTED COUNTRIES^a

	Production (000 m.t.)	Attributed to area			Attributed to yield	
		Irrigated (thousand hectares)	Unirrigated (thousand hectares)	Total (thousand hectares)	Fertilizer (kg of NPK/ha)	Yield (ton/ha)
India						
Average 1963 - 67	52,525	13,413	22,473	35,886	7.77	1.462
Average 1968 - 72	61,480	14,490	22,843	37,333	19.15	1.647
Annual compound growth rate 1965-70	3.2	1.6 (0.6)	0.3 (0.2)	0.8 (0.2)	19.8 (1.5)	2.4 (0.9)
Indonesia						
Average 1963 - 67	15,478	5,739 ^b	-	1,510	7,249	8.83
Average 1970 - 74	21,571	6,923 ^b	-	1,337	8,260	26.30
Annual compound growth rate 1965-72	4.8	2.7 (2.2)	-	-1.7 (-0.3)	16.9 (1.1)	2.9 (1.8)
Philippines						
Average 1963 - 67	4,113	1,102	1,508	549	3,159	7.61
Average 1971 - 75	5,386	1,394	1,578	411	3,383	24.90
Annual compound growth rate 1965-73	3.4	3.0 (1.2)	0.6 (0.3)	-3.6 (-0.6)	16.0 (1.5)	2.5 (1.0)
Thailand						
Average 1963 - 67	11,456	1,706	4,447	-	6,153	3.58
Average 1970 - 74	13,237	1,808	5,227	-	7,035	6.79
Annual compound growth rate 1965-72	2.08	0.83 (0.2)	2.34 (1.7)	-	1.93 (0.3)	0.14 (-0.1)
Pakistan						
Average 1963 - 67	2,019	1,373 ^c	-	1,373	8.01	1.469
Average 1970 - 74	3,437	1,511 ^c	-	1,511	25.54	2.276
Annual compound growth rate 1965-72	7.9	1.4 (1.4)	-	1.4 (1.7)	18.0 (1.7)	6.5 (4.8)
Malaysia (West)^d						
Average 1963 - 67	1,083	53	359	21	433	45.0
Average 1971 - 75	1,695	200	370	13	583	75.0
Annual compound growth rate 1965-73	5.7	18.1 (3.7)	0.4 (0.3)	-5.8 (-0.2)	3.8 (1.4)	6.8 (0.5)
Sri Lanka						
Average 1963 - 67	987	359	238	-	597	25.13
Average 1970 - 74	1,448	380	241	-	621	72.22
Annual compound growth rate 1965-72	5.6	0.8 (0.5)	0.2 (0.1)	-	0.6 (3.5)	16.3 (1.5)

^a Figures in parentheses indicate the percentage points of Annual production growth over the period which is attributable to each input

^b This includes rainfed area

^c Assumption: 100% of rice area is irrigated

^d Figures for West Malaysia are adopted from Yim Kong Ming. "A Study into the Sources of Agricultural Growth in West Malaysia," a term paper submitted to the University of the Philippines at Los Banos in partial fulfillment for the Subject in Agricultural Economics 236. Second Semester, 1976/77

Adopted from: R. W. Herdt A. Te and R. Barker, "The Prospects for Asian Rice Production" Appendix Table 1

West and East Java, Bali and several provinces of the outer-island in the same year (see Table 6). East Java applied the highest fertilizer per hectare, 76 kg in 1974. However, though fertilizer consumption in the outer islands increased from 0 to 9 kg NPK per hectare in 1967 to 3 to 26 kg NPK per hectare in 1974, it was still below the national average of 43 kg NPK per hectare in 1974. The absolute increment in amount of fertilizer per hectare applied in the outer island was less than one-half of the increment in Java. Moreover, fertilizer application per hectare in Java was relatively high compared to national average of fertilizer consumption for rice in several countries in Asia (see Table 9 for fertilizer consumption in Asian countries). Moreover, note that about 85 per cent of total fertilizer consumption in Indonesia goes to Java on the average.

The concentration of modern high yielding varieties and fertilizer consumption in Java during the past was because irrigated rice fields were concentrated in Java. There is a high correlation between high yielding varieties, fertilizer, and irrigation, for without adequate water supply the yield potential of the fertilizer responsive high yielding varieties is not realized. About 65 per cent of the total irrigated rice fields in Indonesia are located in Java.

Moreover, about 60 per cent of the rice field in South Sulawesi are irrigated and South Sulawesi's share in total irrigated rice land in Indonesia is about 10 per cent. The irrigated *sawah* of North Sumatra is only 4,5 per cent of national irrigated rice field but is about 45 per cent of the wet rice field in North Sumatra. West Sumatra and Bali have the same share of total irrigated *sawah* in Indonesia, but irrigated *sawah* in Bali and West Sumatra are 97 and 65 per cent, respectively, of total *sawah* area there.

3. SOURCES OF OUTPUT GROWTH

The general method to quantify the source of output growth is through the estimation of the production function. Unfortunately however, not all the regional production variables for rice in Indonesia are known, notably the labor force in the rice sector. Even for Indonesia as a whole, the national data series on labor in the rice sector are not available. Therefore, the production function approach cannot be used by this study.

Alternately, the components of rice output growth can be quantified. Since the total production of paddy comes from the production of wetland paddy and the production of dryland paddy, the share of each of them in the output growth of paddy can be quantified. Moreover, based on the definition that paddy production is the product of harvested area and average yield, the

contribution of wetland and dryland paddy can be partitioned further into the contributions of its area and yield. Thus, the change in production of total paddy is attributed to area of wetland and dryland paddy as well as yield of wetland and dryland paddy (see Figure 1).

Moreover, the contribution of area and yield of wetland paddy can be further subdivided.² Crop changes arise from change in total wetland area and from change in the area of double cropped.³

The yield increase can be partitioned between increases due to a higher proportion of the area irrigated and a high use of yield increasing inputs such as seed and fertilizer.⁴ Further, in calculating the contribution of fertilizer, it is assumed that one kilogram of fertilizer nutrient (NPK) produces 10 kilograms of paddy.⁵ The contribution of new varieties is assumed to be embodied in the added fertilizer made profitable by their adoption.⁶

Based on the above mentioned concept, the sources of output growth of paddy in Indonesia regionally during 1967-1974 are presented in Tables 10 and 11. The period has been divided into two sub-periods i.e. 1967-1971 and 1971-1974 so that the change in sources of output growth can be shown.

Wetland paddy dominated the sources of output growth of total paddy in all provinces in both periods, but its contribution decreased very much in several provinces in the later period. The contribution of dryland paddy was almost zero in each province in the two periods. This might have been due in part to the fact that Indonesian government has given more attention to wetland paddy in line with the Bimas program in increasing rice production in Indonesia. The extensification and intensification programs for dryland paddy was almost neglected by the government.

2 In Indonesian case, the contribution of area of dryland paddy is merely due to change in physical area.

3 Alternatively, partition can be done into contribution of irrigated and non-irrigated area

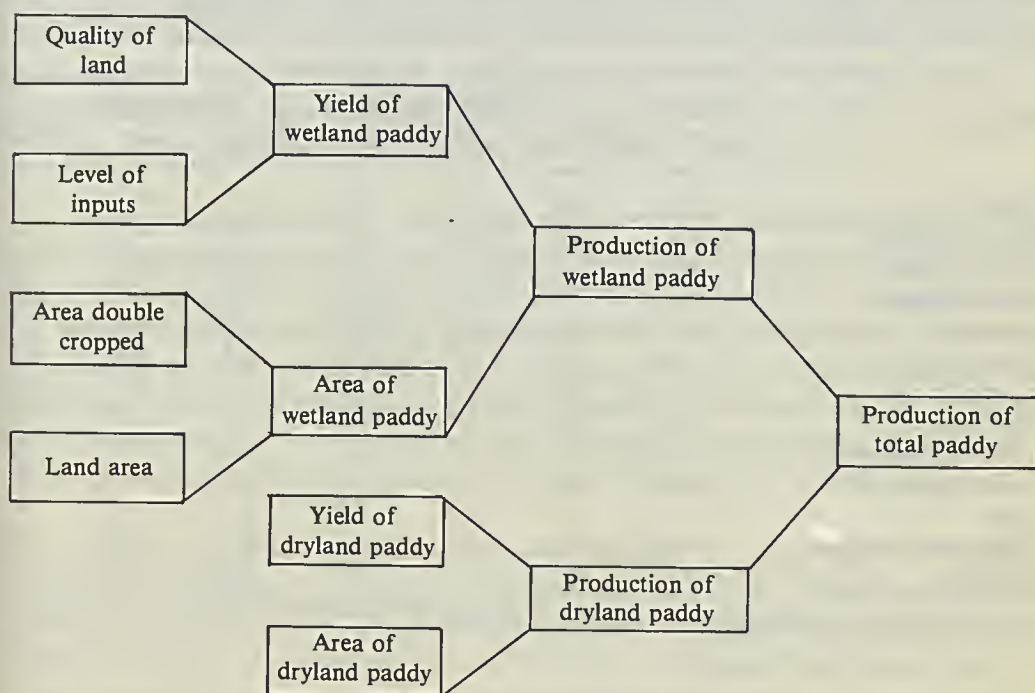
4 See R. Barker, Sumalee Apiraksirikul and D. Antiporta, "Source of Output Growth in Asian Food Grains", paper no. 77-2, Department of Agricultural Economics, IRRI, Los Banos, March 1977

5 John W. Mellor, *The New Economics of Growth-A Strategy for India and the Developing Countries*, Ithaca and London: Cornell University Press, 1976, p. 310

6 See Robert W. Herdt, Amanda Te and Randolph Barker, "The Prospects for Asian Rice Production", paper presented at the International Rice Research Conference, IRRI, Los Banos, April 18-21, 1977. Moreover, see Appendix for the formulas used to compute the sources of output growth

FIGURE 1

CONTRIBUTION OF YIELD AND AREA TO RICE PRODUCTION IN INDONESIA



The contribution of wetland paddy increased only in South Sumatra, Lampung, South Kalimantan, and West Nusa Tenggara in the later period. In West and East Java, its contribution decreased by 30 and 10 per cent, respectively, while in Central Java it decreased by 66 per cent during 1971-1974. The increase in South Sumatra and Lampung resulted from an increase in both yield and area contribution, while the increase in area contribution more than offset the decrease in yield contribution in South Kalimantan. On the other hand, the increase in yield contribution was greater than the decrease in area contribution in West Nusa Tenggara, resulting in increasing the wetland paddy contribution to total output growth.

The reasons for relative decreasing contribution of wetland paddy to total output growth are also different among the remaining provinces. In North Sumatra, West and Central Java as well as South Sulawesi, the decrease in both area and yield contribution was the reason. However, the increase in yield contribution could not balance the decrease in area contribution in Aceh, West Sumatra, and Bali, but the decrease in yield contribution was greater than the increment of area contribution in East Java.

Table 10

SHARES OF AREA AND YIELD OF WETLAND AND DRYLAND PADDY IN OUTPUT GROWTH OF TOTAL PADDY IN SELECTED PROVINCES OF INDONESIA, 1967-1971

Province	Output growth	Attributed to					
		Wetland paddy			Dryland paddy		
		Prod.	Area	Yield	Prod.	Area	Yield
Aceh	5.0	5.0	3.5	1.5	0	0.2	-0.1
North Sumatra	8.8	8.9	5.1	3.9	-0.1	-0.5	0.3
West Sumatra	4.5	5.2	3.1	2.1	-0.7	-0.5	-0.2
South Sumatra	3.2	3.8	2.7	1.2	-0.7	-0.9	0
Lampung	3.1	3.8	4.0	-0.3	-0.7	-0.7	0.1
West Java	6.7	7.0	3.0	3.9	-0.3	-0.3	0.1
Central Java	9.5	9.5	2.2	7.3	0	-0.1	0.1
East Java	5.2	5.1	1.8	3.3	0.1	0	0.1
South Kalimantan	5.4	5.9	2.4	3.5	-0.5	-0.2	-0.3
South Sulawesi	6.9	7.2	1.8	5.6	-0.3	-0.3	0
Bali	5.5	5.8	3.5	2.2	-0.3	-0.3	0
West Nusa Tenggara	4.4	5.1	2.8	1.5	-0.7	-0.6	-0.1
Indonesia	6.3	6.5	2.3	4.2	-0.2	-0.3	0.1

Table 11

SHARES OF AREA AND YIELD OF WETLAND AND DRYLAND PADDY IN OUTPUT GROWTH OF TOTAL PADDY, 1971-1974

Province	Output growth	Attributed to					
		Wetland Paddy			Dryland Paddy		
		Prod.	Area	Yield	Prod.	Area	Yield
Aceh	3.4	3.8	0.7	3.1	0.4	0.1	0.5
North Sumatra	0.6	1.5	0.8	0.7	0.9	0.7	0.1
West Sumatra	3.7	4.0	0.8	3.2	0.3	0.3	0
South Sumatra	5.4	5.2	3.5	1.6	0.2	1.5	1.8
Lampung	9.0	8.7	6.1	2.5	0.3	2.0	2.4
West Java	4.7	5.0	2.8	2.2	0.3	0.4	0.1
Central Java	3.2	3.2	1.0	2.2	0	0.1	0
East Java	4.6	4.6	2.6	2.1	0	0	0
South Kalimantan	6.7	7.2	4.5	3.0	0.5	0.7	0.2
South Sulawesi	1.1	1.6	0.2	1.3	0.5	0.6	0.1
Bali	3.8	3.6	0.3	3.4	0.2	0.1	0.1
West Nusa Tenggara	9.9	10.1	2.3	7.9	0.2	0.2	0
Indonesia	4.1	4.3	1.9	2.2	0.2	0.4	0.2

It is interesting to raise question as to why the contribution of wetland paddy to total output growth increased in East Java while the yield contribution in the three provinces of Java decreased in the latter period. These figures were seemingly unbelievable because everybody has argued land area has been exhausted in Java and, as indicated by historical records, fertilizer consumption per hectare and irrigated rice field have substantially increased there. To answer the above questions more precisely, let us look at the sources of output growth of wetland paddy production (see Table 12 and 13).

The area contribution to output growth of wetland paddy decrease in most provinces being studied but not in South Sumatra, Lampung, East Java and South Kalimantan in the latter period. Moreover, in addition to the provinces of Java, North Sumatra, South Kalimantan and South Sulawesi also recorded a decrease in yield contribution to output growth. The main reason for the decrease in area contribution in the corresponding provinces was the decrease in contribution of double-cropped area. Put it differently, the role of irrigation was less important in area growth there during such period.

In East Java, the increase in area contribution to output growth resulted from the increased contribution to double-cropped area, while there was no change in contribution of physical land area to output growth during the same period. Further, the increase in contribution of irrigated land area was the main reason for the increase in double-cropped area there.

The decrease in yield contribution to output growth in West Java resulted from the greater decrease in the contribution of the residual than any increase in fertilizer. The decrease in residual contribution not only took place in West Java but also in other provinces of Java as well as in North Sumatra, South Kalimantan, and South Sulawesi. This was surprising in spite of increasing trend of irrigated rice fields according to the historical records there. Probably, this may arise because tertiary canals were neglected in the corresponding provinces. One writer reported that a closer inspection of the results of individual irrigation projects during the first five year development program (Pelita I) revealed that in many cases only primary canals had been rehabilitated together with the necessary structure (dams, watergates, etc.).⁷

In addition to the decrease in residual contribution, the share of fertilizer in output growth decreased also in Central and East Java, in spite of increasing fertilizer used per hectare in both provinces. The same was found in West Sumatra, South Sumatra, and Lampung. This probably could be explained by the rumours that many farmers who registered as members of the Bimas pro-

⁷ Anne Booth, "Irrigation in Indonesia, Part I", *BIES*, Vol. 1, No. 3, March 1977

Table 12

CONTRIBUTION OF CHANGES IN PHYSICAL LAND AND DOUBLE-CROPPED AREA TO OUTPUT GROWTH OF WETLAND PADDY IN
SELECTED PROVINCES OF INDONESIA, 1967-71 AND 1971-74

Province	Attributed to									
	Output growth		Physical land area		Double-cropped area		Total area		Yield	
	1967-71	1971-74	1967-71	1971-74	1967-71	1971-74	1967-71	1971-74	1967-71	1971-74
Aceh	5.4	4.0	1.5	1.5	2.3	- 0.8	3.8	0.7	1.7	3.3
North Sumatra	10.9	1.7	2.2	2.0	4.0	- 1.3	6.2	0.9	4.8	0.8
West Sumatra	5.5	4.1	2.4	2.6	0.9	- 1.8	3.3	0.8	2.2	3.3
South Sumatra	5.8	7.3	1.8	1.7	2.5	3.3	4.3	5.0	1.6	2.2
Lampung	6.9	13.8	3.0	2.6	4.8	7.0	7.4	9.6	0.6	3.9
West Java	7.4	5.2	0.5	0.4	2.7	2.6	3.2	3.0	4.2	2.3
Central Java	9.7	3.2	0.2	0.2	2.0	0.8	2.2	1.0	7.5	2.3
East Java	5.2	4.8	2.3	2.3	-0.4	0.4	1.9	2.7	3.4	2.1
South Kalimantan	6.4	7.7	1.9	0.3	0.7	4.5	2.6	4.8	3.8	3.1
South Sulawesi	7.7	1.6	8.7	11.5	-6.8	-11.3	1.9	0.2	6.0	1.3
Bali	5.9	3.6	1.5	1.5	2.1	- 1.2	3.6	0.3	2.3	3.4
West Nusa Tenggara	5.6	10.7	0.6	0.5	2.5	1.9	3.1	2.4	2.6	8.4
Indonesia	7.2	4.6	1.7	1.6	1.1	0.4	2.6	2.0	4.7	2.5

gram did not use the received fertilizer but sold it to others. In other words, fertilizer recorded for rice was actually used on other crops such as vegetables and sugar cane, resulting in a decrease of fertilizer contribution to output growth of paddy.

Further, note also that Table 13 shows a large residual (greater than 50 per cent of the output growth) for Aceh, West Sumatra, South Sulawesi, Bali and West Nusa Tenggara in the later period. This may arise because drainage and desalinization was ignored there except as it was reflected in irrigated rice area.

4. CONCLUDING REMARKS

Theoretically, rice output can be increased through the expansion of cultivated rice area by opening new land or by substituting other crops for rice, or by increasing intensity of land use. Rice yield can be increased by introducing and developing new rice technology.

Since the actual yields achieved by farmers - on the average - were much lower than those achieved in the experimental plots, there is a chance to increase yield per hectare of paddy in all provinces of Indonesia, even in the provinces of Java. The chance is supported by the fact that the yield growth rates of total and wetland paddy in Java decreased drastically during 1971-74, and the contribution of yield to total output growth of paddy also decreased in Java during the same period. However, unlike in the Outer Islands, it will be difficult to increase the contribution of area to output growth through opening new land in Java. The land intensity, both in Java and the Outer Islands can be improved through improvement of irrigation. As a matter of fact, the irrigation structure was not completely rehabilitated in most provinces of Indonesia during the past. In addition, water management problem should also be improved in several provinces.

Moreover, since the role of dryland paddy was negligible in the sources of output growth of total paddy during the past, paddy output can also be increased by giving more attention to dryland paddy. Probably, extensification and intensification programmes in dryland paddy could be introduced by the government, notably in the Outer Islands.

APPENDIX

Let:

Q = production of total paddy

Q_1 = production of wetland paddy

Q_2 = production of dryland paddy

A = harvested area of total paddy

A_1 = harvested area of wetland paddy

A_2 = harvested area of dryland paddy

A_1 = harvested area on irrigated *sawah* (wet rice field)

A_w = physical area of *sawah*

F = fertilizer (NPK) consumption per hectare

Y = yield per hectare of total paddy

Y_1 = yield per hectare of wetland paddy

Y_2 = yield per hectare of dryland paddy

q = growth rate of Q

q_1 = growth rate of Q_1

a = growth rate of A

a_1 = growth rate of A_1

a_2 = growth rate of A_2

y = growth rate of Y

y_1 = growth rate of Y_1

y_2 = growth rate of Y_2

then:

$$(1) Q = Q_1 + Q_2$$

$$(2) \Delta Q = \Delta Q_1 + \Delta Q_2$$

$$(3) 1 = \frac{\Delta Q_1}{\Delta Q} + \frac{\Delta Q_2}{\Delta Q}$$

The equation (3) tells us that the percentage change in total output attributed to wetland or dryland paddy is:

$$(4) \frac{\Delta Q_i}{\Delta Q} \times 100, \quad i = 1, 2$$

The share of Q_i in growth rate of Q is:

$$(5) \frac{\Delta Q_i}{\Delta Q} \times q$$

Furthermore, from the definition that $Q_i = A_i Y_i$, we can derive that:

$$(6) \Delta \log Q_i = \Delta \log A_i + \Delta \log Y_i$$

$$(7) 1 = \frac{\Delta \log A_i}{\Delta \log Q_i} + \frac{\Delta \log Y_i}{\Delta \log Q_i}$$

From (7) the next conclusions follow: The percentage change in output Q_i attributed to A_i is:

$$(8) \quad \frac{\Delta \log A_i}{\Delta \log Q_i} \times 100$$

and the percentage change due to Y_i is:

$$(9) \quad \frac{\Delta \log Y_i}{\Delta \log Q_i} \times 100$$

The share of A_i and Y_i in output growth of Q_i are, respectively:

$$(10) \quad \frac{\Delta \log A_i}{\Delta \log Q_i} q_i$$

$$(11) \quad \frac{\Delta \log Y_i}{\Delta \log Q_i} q_i$$

Note that $\frac{\Delta \log A_i}{\Delta \log Q_i} q_i = a_i$ (growth rate of A_i) and $\frac{\log Y_i}{\log Q_i} q_i = y_i$ (growth of Y_i)

only if we apply the growth rate formula in the form of: $g = \frac{dX_t/dt}{X_t}$, where $X_t = X_0 e^{gt}$

However, if the annual compound growth rate with the formula

$$g' = \frac{(X_t)^{1/t}}{X_0} - 1 \text{ is considered}$$

their equality breaks down because $g' \neq g$.¹ Here, $X_t = X_0 (1 + g')^t$, and the relationship between g and g' can be written as $(1 + g') = e^g$.

Further, the share of A_i and Y_i in output growth of Q are, respectively.

$$(12) \quad \frac{\Delta \log A_i}{\Delta \log Q_i} \cdot \frac{\Delta Q_i}{\Delta Q} \cdot q$$

$$(13) \quad \frac{\Delta \log Y_i}{\Delta \log Q_i} \cdot \frac{\Delta Q_i}{\Delta Q} \cdot q$$

In calculating the contribution of change in physical area of wetland to output growth of Q_1 the next formula is used:

$$(14) \quad \frac{\Delta A_w}{\Delta A_1} \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot q_1$$

The corresponding contribution into the output growth of total paddy (Q) is equal to:

$$(15) \quad \frac{\Delta A_w}{\Delta A} \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot \frac{\Delta Q_1}{\Delta Q} \cdot q$$

1 See Alpha C. Chiang, *Fundamental Methods of Mathematical Economics*, International Student edition, Tokyo: Kogabusha Co., Ltd., 1967, pp. 277-279

Since the data of double cropped area are not available, its contribution is treated as residual, namely:

$$(16) \quad \left(1 - \frac{\Delta A_w}{\Delta A_1}\right) \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot q_1$$

$$(17) \quad \left(1 - \frac{\Delta A_w}{\Delta A_1}\right) \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot \frac{\Delta Q_1}{\Delta Q} \cdot q$$

For computing the alternative subdivision of contribution of wetland into output growth the following formula are used:

$$(18) \quad \frac{\Delta A_1}{\Delta A_1} \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot q_1$$

to compute the contribution of irrigated area (A_1) to output growth of wetland paddy production (Q_1); and

$$(19) \quad \frac{\Delta A_1}{\Delta A_1} \cdot \frac{\Delta \log A_1}{\Delta \log Q_1} \cdot \frac{\Delta A_1}{\Delta Q} \cdot q$$

to calculate the contribution of irrigated wetland area to the output growth of Q .²

To compute the share of non-irrigated land in output growth, (18) and (19) are used but unirrigated area is used in place of irrigated area. To compute the fertilizer contribution into output growth of wetland paddy the following formula is used:

$$(20) \quad \frac{\Delta F(10)}{\Delta Y_1} \times \frac{\Delta \log Y_1}{\Delta \log Q_1} \cdot q_1$$

where F is fertilizer consumption per hectare of wetland harvested area. Its contribution in output growth of Q is calculated as:

$$(21) \quad \frac{\Delta F(10)}{\Delta Y_1} \cdot \frac{\Delta \log Y_1}{\Delta \log Q_1} \cdot \frac{\Delta Q_1}{\Delta Q} \cdot q^3$$

Lastly, the change of yield due to a higher proportion of irrigated area is calculated as residual, i.e.:

$$(22) \quad \left[1 - \frac{\Delta F(AO)}{\Delta Y_1}\right] \cdot \frac{\Delta \log Y_1}{\Delta \log Q_1} \cdot q_1$$

$$(23) \quad \left[1 - \frac{\Delta F(10)}{\Delta Y_1}\right] \cdot \frac{\Delta \log Y_1}{\Delta \log Q_1} \cdot \frac{\Delta Q_1}{\Delta Q} \cdot q$$

² The contribution of A_1 to growth rate of A_1 is equal to $(\Delta A_1 / \Delta A_1) a_1$

³ The contribution of F to growth rate of yield equals $[\Delta F(10) / \Delta Y_1] Y_1$

REFERENCES

- Barker, R., Sumalee Apiraksirikul and D. Antiporta, "Source of Output Growth in Asia Food Grains", Paper No. 77-2, Department of Agricultural Economics, IRRI, Los Banos, March 1977
- Booth, Anne, "Irrigation in Indonesia, Part I", *Bulletin of Indonesian Economic Studies*, Vol. I, No. 3, March 1977
- Chiang, Alpha C., *Fundamental Methods of Mathematical Economics*, International Student Edition, Tokyo: Kogabusha Co., Ltd., 1967
- Hert, Robert W., Amanda Te and Randolph Barker, "The Prospects for Asian Rice Production", Paper presented at the International Rice Research Conference, IRRI, Los Banos, April 18-21, 1977
- Lains, Alfian, *Regional Concentration in Expansion of Rice Production in Indonesia*, Ph.D. Thesis, University of the Philippines at Diliman, 1978
- Lains, Alfian, "Adjustment in Rice Production, Harvested Area and Yield Data in Indonesia" Discussion Paper, No. FE-80-1, Faculty of Economics, Andalas University, Padang, February 1980. Published in *The Indonesian Quarterly*, Vol. IX, No. 2, April 1981
- Mears, Leon A., "Indonesia's Food Problems, Pelita II/III", *Ekonomi dan Keuangan Indonesia*, Vol. 24, No. 2, June 1976
- Mellor, John W., *The New Economics of Growth-A Strategy for India and the Developing Countries*, Ithaca and London: Cornell University Press, 1976
- The Republic of Indonesia, Directorate of Agricultural Technique Directorate General of Agriculture Department of Agriculture, *Report on Fertilizing Examination of Wetland Paddy During the 1970/71 Wet Season (in Indonesia)*, Jakarta, n.d.

MANAGEMENT OF INTEGRATED RURAL DEVELOPMENT IN INDONESIA*

I. INTRODUCTION

The villages or rural areas in Indonesia are varied in nature. These variations or differences are in terms of their socio-economic conditions, traditions, structures, administration, levels of development and potentials. One village might be different from the other due to one or more of those aspects. Regardless of the differences, however, it must be stressed at the outset that the villages or rural areas are interrelated, interdependent, and mutually symbiotic among each other.

Ever since Indonesia embarked upon its First Five Year Development Plan in 1969, its programs emphases have been in the development of villages or rural areas. This is due to the fact that almost 82 per cent of Indonesia's total population live in rural areas. Those people are classified as a low income group of the society. Thus, by developing the villages or rural areas the quality of life of the majority of the population in Indonesia will be improved. Therefore, a great deal of efforts of development programs such as sectoral, regional as well as Presidential Aid (Inpres) projects are directed toward the development of the rural areas.

Since the conditions of the rural areas vary, the 60455 villages in Indonesia are classified into three main categories, namely:

1. Stage of *Swadaya* village, described as a traditional village or community in which their economic conditions are only sufficient to fulfill their primary needs;

* Prepared jointly by the Department of Home Affairs and the National Institute of Administration, Republic of Indonesia for Eropa's Conference on "Management of Integrated Rural Development" held in Jakarta, Indonesia, June 12-19, 1981

2. Stage of *Swakarya* village, described as a transitional village or community that has been exposed to external influences including the introduction of appropriate technology;
3. Stage of *Swasembada* village, described as a more advanced and modern village. The ultimate goal of the rural development programs in Indonesia is to transform all villages into Pancasila villages as the realization of ideas stated in the 1945 Constitution and the Guidelines of the State Policy. This *Pancasila* village can be described as a modern and advanced village within which all of the basic needs of the people are met on a self-sufficient basis such as: food, clothes, health, education, employment opportunity, security, the upholding of law and order and social welfare benefits will have been equally distributed among the members of the community.

Statistics show that in the Year of 1978-1979 percentages of villages in Indonesia according to their stages of development are as follows:

- a. 30,8% for Swadaya village;
- b. 56,4% for Swakarya village;
- c. 12,8% for Swasembada village;

Comparing the percentages with the record in 1971-1973 one can see that progress has been made because in those years 44% were Swadaya Villages, 53% were Swakarya Villages and only 3% reached the stage of Swasembada Villages.

The Government of Indonesia has already decided that within the next 25 to 30 years the 60455 village in Indonesia should have already been developed into *Swasembada* villages. This is the target that has been adopted by the Department of Home Affairs which is primarily responsible for rural development in Indonesia as a strategy in developing villages or rural areas.

It was expected that the rate of transformation of rural village into *Swasembada* village is 4 per cent annually. However, previous experience has indicated that so far the average rate of development is only 1.5 per cent yearly. Therefore, efforts are now being launched to find out a new system or technique of development as to how to accelerate the rural development targeted annual rate of 4 per cent.

II. PROBLEMS FACED IN RURAL DEVELOPMENT

The focal point in every Five Year Development Plan of Indonesia is how to improve the standard of living of the rural population. Various kinds of sectoral policies have been formulated to solve these problems and various

development programs have been implemented to speed up rural development. Despite great progress that has been made, much remains to be done.

There are many kinds of problem faced in developing rural areas which can be classified into three main problem areas, namely:

A. A problem of ecosystem which is characterized by uneven distribution of population and settlement. There are three patterns of population distribution and settlement in Indonesia:

1. Java and Madura are inhabited by 61,9 per cent of the total population in Indonesia while covering only 7 per cent of the land area of Indonesia - 678 inhabitants per 1 km² while their natural resources already have been exploited to their maximum and almost up to their critical points of utilization. In these areas job seekers are increasing while employment opportunities can not accomodate job demands which result in increasing the traditional labor surplus - disguised unemployment.
2. Other islands, such as Sumatra, Kalimantan, Sulawesi and West Irian are scarsely populated - 21 inhabitants per 1 km². Their natural resources have not been properly exploited yet partly due to lack of manpower and infrastructure.
3. Villages, which have been able to keep a proper balance between the distribution of population and their natural resources, have not been managed and developed sufficiently yet.

B. The second main problem is the socio - economic conditions which need to be improved. These problems include the condition of the living environment such as health which is unsatisfactory, low level of education, inadequate housing facilities, low productivity caused by low level of income of the community and their welfare.

C. The third main problem is in the area of management system. This main problem is characterized among other things by the scarcity of dynamic, creative and fair leadership, inefficient coordination of development, low level quality and quantity of village administrative machinery, lack of capability to plan, weak implementation, and lack of control of developmental implementation.

The problems are exacerbated by the fact that due to historical conditions, the villages are varied in nature, in terms of their structures, aparatus, potentials as well as their types. At this stage of development the village is basically an administrative territory rather than an economic entity.

III. THE EXISTING MACHINERY OF RURAL DEVELOPMENT

Rural development in Indonesia is under the auspices of the Department of Home Affairs. In other words, functionally it is the Department of Home Affairs which has the functional responsibility to coordinate rural development plans in the Central Government. While at the local level it is the responsibility of the Governors and Bupatis (district administrative officers) in the Provinces and Kabupatens respectively.

To bring about an effective integrated rural development in Indonesia, there is a forum of coordination in the central Government set up by the Directorate General of Rural Development of the Department of Home Affairs. The members of this forum consist of officials from other Departments which are concerned with rural development. This forum of coordination meets periodically i.e. every month.

However in reality rural development programs are implemented through four pronged mechanism of management namely:

A. Implementation of development projects through the process of *deconcentration*. Such projects are planned and financed by the central government and implemented by central field officials of certain Departments in the region. Such project is usually sectoral in nature.

B. Implementation of development projects through the process of *decentralization*. Such projects are planned and financed by local governments performed by local officials. Those projects are known as local projects.

C. Implementation of development projects through the process of *co-act administration*. Such project are planned and financed by the central government but performed by the local government apparatus. The most common type of this kind of project it what is known as Presidential Aid (Inpres) projects.

D. Implementation of development projects through the process of *community initiative*. Such projects are planned and financed by the rural community. However, if there is a shortage of funds for the project they usually turn to the central government for additional funds for the project concerned.

Experience in implementing those projects has indicated that the level of coordination of the projects needs to be improved. As a result, the success of a

sectoral program does not necessarily result in the success of the other sectors, much less the success in the development of a village as an entity. It is probably safe to say that this is one of the basic reasons why the annual rate of the rural development is far below the expected target of 4 per cent.

IV. LOCAL DEVELOPMENT WORKING UNIT

Recognizing the lack of the capability of the existing machinery to reach set target in developing rural areas, Indonesia is continuously searching for a new and more effective system or technique in rural development. Furthermore Indonesia realizes the different socio and economical stages of the rural areas as well as the interrelated, interdependency, and their mutual symbiotic nature. These conditions contribute to the effort of innovating a new system of developing villages or rural areas.

The purpose of developing a new system in promoting faster growth in the rural areas is to speed up the attainment of *Swasembada* village as a stepping stone to the achievement of the *Pancasila* village as described earlier in the paper. One of the basic principles underlying the innovation of a new system is the realization that the development of villages or rural areas is a sub - system of regional development which in turn is a sub - system of national development. To make these systems approach more meaningful, since the second Five Year Development Plan the approach to development is to develop a better concept and system of regionalization. For Indonesia the concept of regionalization means that development centers throughout the country have been determined as follows:

- a. Main development area with its main development centers (4)
- b. Large development area with its development centers (10)
- c. Medium development sub-area with its sub-development centers (85).

The development areas with its development center hierarchically is composed of a development structure of a large - medium - small - smallest unit in which each unit is under the auspices of a large development unit.

This principle of regionalization of development planning which comprises large - medium - small - smallest development units serves only as a "mapping" guide. In reality the implementation of the development plan is always performed on the basis of administrative and territorial considerations i.e. the National-Provincial-Kabupaten (Municipal) and Kecamatan Apparatus with their villages as stated in Article 18 of the 1945 Constitution, Law No. 5 of 1974 on Basic Rules of the Government Machinery in the Regions and Law No. 5 of 1979 on Village Government.

Special reference to the Law No. 5, 1979 on village administration should be made. This Law contains the new government policy on autonomous village government and sub-districts both as small entities in the government administration. By the present structure and form of village government as specified in this Law, accommodation of social participation in rural development becomes more realistic. Social participation is channelled through the Village Council (Lembaga Musyawarah Desa) which is composed of prominent traditional leaders, and chaired by the head of the village government. Sub-district administration is mainly found in urban areas. New development of this sub-district is that all personnel according to the Presidential Decree No. 55/1980 become civil servants. The village government coordinates social aspiration and participation in development efforts.

Based on this system of regionalization the new method is set up by considering the ecosystem and the potentialities of each development area which can be developed and utilized for the identification of small/smallest development areas as a subordination of Kabupaten development areas. The Kecamatan, as a rural development planning area which covers a rural ecosystem and has homogeneous potentialities, is considered a rural development center.

One innovative system of rural development in Indonesia is called *Local Development Working Unit - UDKP*. It is an integrated part of the national development system by using the Kecamatan as the basis of operation. The UDKP's system is set up to manage the acceleration of the attainment of *Swasembada* village. The main function of UDKP is to set up priorities of rural development to integrate the sectoral, local, Inpres, and rural community development programs, and to coordinate and monitor the implementation of those programs. The Camat, as the lowest deconcentrated government official in the region, is responsible for the implementation of the rural development programs of the UDKP to maintain the concept of unity of command.

In its operation the UDKP has the responsibility of stimulating the rural community in increasing their efforts in the primary, secondary as well as tertiary economic sectors. In addition to this basic responsibility the UDKP should also provide services to rural communities, such as: consultation, communication, administration and socio-economic services which are appropriate to retain their dynamic stage. For that purpose the UDKP's operations will cover the following activities: surveys undertaken to formulate plans, offering training opportunities to develop cadres by increasing their skills, and improving job methods by introducing appropriate technology.

The main activities of UDKP are as follows:

A. *Preparation and Planning Stage*

- determination of development sites;
- offering training in improving implementation skills;
- undertaking surveys at the Kecamatan level;
- integrating various Kecamatan development plans and programs;
- setting up village patterns of development;

B. *Implementation Stage*

- organizing workshops in the Kabupaten/Municipal level and discussion in the Kecamatan level on rural development;
- filling up activities in sectoral, regional, and Inpres programs;
- providing guidance and extension services to the villages;
- providing guidance and extension services in increasing community participation;
- introducing appropriate technology projects.

C. *Maintenance Stage*

- improving the government machinery at the Kecamatan level by providing courses and training on job performance;
- improving Kecamatan and Village physical facilities;
- improving community order by increasing the role of the village Social Committee in various programs;
- improving the administration of Kecamatan and village;
- improving the feed-back information system.

D. *Development Stage*

Even if a UDKP Kecamatan, already attains its stage of *Swasembada* and has a sound management system for implementation of development plans and programs, it has to be continously developed based on their potential, typology and function of development in line with regional and sub-regional development.

E. *Monitoring Stage*

At this stage the activities comprise of monitoring, reporting and evaluating UDKP with the main objectives, i.e.

- to identify problems which demand solution;
- to obtain feed back information promptly and objectively;
- to support the attainment of determined objectives by identifying and correcting existing deviation in implementation;
- the exercise of monitoring, reporting, and evaluating is done continuously from the Provinces to the Kabupatens/Municipality to the Kematans and Villages.

V. PLANNING OF THE LOCAL DEVELOPMENT WORKING UNIT

A. Basis of the Kecamatan UDKP Planning

The development activities of UDKP will be carried out smoothly and harmoniously provided that an integrated and comprehensive plan for the region concerned already exists. Based on these integrated and comprehensive plans Government Agencies in the regions and respective communities will be busy with development activities according to their functions and responsibilities.

To make a sound regional plan, an accurate and profound knowledge of the respective region is essential. This knowledge on the respective region is in the framework of regional analysis, the role and function of all elements contributing to the establishment of this region, including their role and functions as an integral part of a large region which is capable of developing the community into a more advanced stage.

In formulating UDKP's plans the following aspects are to be considered:

- the typology and potentials of the respective region;
- the location and functions of a region in its relation to a large region of development, i.e. the Kabupaten as a development region;
- other development activities which have been determined at the Kabupaten, Province, and National levels;
- the role of Kecamatan which will be developed in their relation to a Kabupaten region.

It is clear that the approach to planning in Kecamatan UDKP's as regional approach of development - eco-development, should consider the environmental, human and technological aspects as the basis for this process of planning.

B. Knowledge of the Region

To prepare a sound plan, knowledge of the region should be acquired. It should analyse systematically the available resources in the region which cover the following aspects:

- The potential of natural resources and the living environment;
- The manpower potentiality, especially women and youth;
- The outcome of the work and technology such as: the existing infrastructure, the structure and nature of economic activities, the structure and

scope of government activities, the structure and resources of funds, the patterns and varieties of products, and the structure and pattern of marketing of the products.

For the purpose of acquiring those data a survey will be conducted and the data will be used as the basis of drawing up UDKP's plans. To prepare a UDKP's master plan requires time and it should be done in several stages. The first stage is to conduct a study on what now exists as the physical/natural resources situation and its environment, socio-economic conditions, and what could be further developed.

The second stage is to identify and analyze problems followed by necessary solutions and to draft required plans in line with the pattern of development of the region concerned.

The third stage is to prepare programs based on established priorities. Plan projects are drafted from the master based on fixed programs. The yearly budget is then formulated for the fixed projects.

It is interesting to note that in the planning process at UDKP level, the role of the village community becomes extremely important. This role can be reflected by the necessity of UDKP consultation in the forum of workshop with LKMD as a social organization which is also functioning as a vehicle for community participation at the village level, and receives the task of being the government partner for village development and social commitments in the promotion of common welfare.

C. Regional Chart

A regional master plan of development should be completed with informations and charts including: a situational, analytical and plans chart.

D. Adaption of Plans

The next step is implementation. The UDKP plans become the main subject of discussion at workshops at the Kabupaten/Municipal level in order to get the response of Local Governments Agencies and other Government Agencies from the viewpoints of their functions and responsibilities. The stage of the planning process, programming and drafting the yearly projects through UDKP can be described as follows:

1. To prepare an inventory on the whole project which is financed by Central and Local Governments - Province and Kabupaten, and the participation of the community;
2. On the basis of the result of UDKP surveys to set up priorities of development at the Kecamatan level and then adapted to the projects determined by the Kabupaten/Municipal region of development;
3. The determined projects should be broken down into further detail according to their sites, objectives, targets, activities, financing, and the time needed for their implementation.
4. These projects and their formulation should be derived from workshops at the Kabupaten/Municipal which are then submitted to the Governor and the copies of which are sent to Local Planning Board and Government Agencies in the Province. Meanwhile the decisions on projects derived from the Kabupaten/Municipal workshops which are already clear and concrete in their source of financing, and approved by the Government agencies, can be directly implemented. The discussion at a UDKP Kecamatan is to break down the implementation of projects which have been already approved at the Kabupaten/Municipal workshop, and to intensify the community participation in the implementation of those projects.
5. UDKP's workshop at the Province, based on adopted national and regional development policies, is to analyze the results of the workshop at the Kabupaten/Municipality and to evaluate their urgency value for the purpose of synchronizing them with the adopted policies. The Governor of the Province will then submit the results of the UDKP workshop to the Minister of Home Affairs through the Directorate General of Rural Development and to the Chairman of the National Planning Board.
6. Based on the results of the UDKP workshop at the province the government agencies in the region, on the basis of their respective functions and responsibilities, will include those approved projects in their own programs. After it has been coordinated with the Local Planning Board it is then submitted to departments and non-departmental agencies, the Department of Home Affairs, and the National Planning Board for further processing, especially during national consultation of the Local Planning Board - National Planning Board, Departments of the Central Government, and during conferences for coordination of rural development.

VI. LOCAL DEVELOPMENT WORKING UNIT IMPLEMENTATION

The ever increasing number of development projects at the Kecamatan and villages need coordination during the planning process, implementation, and monitoring in order to achieve a maximum effect and efficiency. The purpose

of conducting a workshop at Kabupaten/Municipal level as well as organizing discussions at the Kecamatan is to realize integrated projects in developing rural areas. An integrated project will permit efficacious implementation considering the limited funds available, whether it is provided by the Central Government budget or Local Government budget or the rural community's own efforts, or a combination thereof.

All development programs at UDKP are directed toward the acceleration of achieving *Swasembada* village as described previously. Therefore, a knowledge of Kecamatan region is essential in order to know exactly its typology and stage of development of the villages. This knowledge should also include an accurate and systematic analysis of the region.

Each UDKP Kecamatan has different development programs due to the following conditions as mentioned below:

- A. potential natural resources, manpower and typology of the Kecamatan concerned;
- B. the position of the Kecamatan within the regional development - Kabupaten or regional/sub-regional context;
- C. the development function of the respective Kecamatan within the development structure of the region of sub-region.

Based on those factors and the analysis of data and prepared plan, priorities of desired programs/projects could be decided upon. The desired projects can be drafted simultaneously as long range, intermediate, and short range plans. From the analysis of ten factors or typology and level of development, such as: demography (D), natural resources (N), location/orbit (U), economical condition (E), village productivity (Y), tradition/community attitudes (A), training and skill (Tr), village institution (I), mutual help (GR) and communication and transportation infra-structure (Is), it is possible to determine their level of development. From this analysis programs or projects based on their high, fair, and low priorities can be formulated.

For example: an UDKP Kecamatan having its typology and level of development such as: *Swasembada* village less than 10%, *Swakarya* village 30%, and *Swadaya* village 60%, with their lowest development factor respectively as follows: E1, Tr1, Is1, Y1 and A1. From this analysis conclusions can be drawn in order to obtain Y3 and A3 - the highest level of development and the first priority of development programs.

The three programs mentioned above could be broken down into development projects, for example, in order to raise E1 to E2 and E3 efforts such as

increased effort of small industrialization and home industry in the village concerned, intensification of agriculture in its broader sense, and increased employment opportunities should be intensified. These efforts will involve several Departments and Non-Departmental Agencies and other government Technical Agencies.

Furthermore, in order to increase Tr1 to Tr2 and to Tr3 covering various kinds of programs, for example: the formal and informal education in order to increase the community knowledge and skills. Besides these programs, courses, training intensive extension services offered by several government agencies in the village should be integrated in order to achieve maximum results.

Improving Is1 to Is2, and to Is3 requires social, economic and governmental infra-structures which should be expanded, for example: transportation, production, marketing, social - such as schools, religious and health services, drinking water and living environment.

The development program of improving E, Tr, and Is is the main program which should be broken down clearly, and integrated to achieve the maximum efficiency and effectiveness. Then it should be formulated into long range, intermediate, and short range programs, and followed by the preparation of projects which should be monitored continuously in order to know the results.

From this description it is obvious that an integrated village or rural development program is an appropriate method. Essentially national development in the Central Government has been implemented by departments and non departmental agencies with their aggregative sectoral programs while in the region it becomes integrated regional programs involving governors, bupati, mayors, and camats, respectively as the heads of the government administration machineries responsible for the implementation of those projects.

Since *Pelita I* and *Pelita II* several efforts had been made through the implementation of various programs in order to increase employment opportunities by intensification of agriculture, improvement of village infra-structure, labor intensive program, village cooperative (BUUD/KUD), transmigration, and resettlement. However, those efforts will not solve the problem completely. Several concepts have been proposed such as landreform, extensification of agriculture with an area system of development - outside Java, and to establish agro-industrial centres.

The agro-industrial centers could offer services conformed to services offered by UDKP.

To be an agro-industrial center certain requirements have to be met such as:

- a. available manpower to be distributed to other sectors;
- b. available potential natural resources to be exploited and developed;
- c. a harmonious relationship connected with the development center of higher development stage;
- d. readiness to use appropriate technology for which an accurate research undertaking is necessary.

The determination of a small development center can be processed through a planning process under the auspices and guidance of the Local Planning Board and Central Government Agencies in the region. This mechanism of coordination has been developed through the UDKP management system of rural development - Forum of Consultation in the Central Government, Forum of coordination meetings in the Province, workshops in kabupaten/minicipality and discussions in the kecamatan.

With this existing system a densely populated Kecamatan needs the use of appropriate technology in developing rural areas. However it should be preceded by an accurate observation pertaining to various factors such as potential resources available in the rural area concerned, regional development with their development centre within the Kabupaten with the following courses of action:

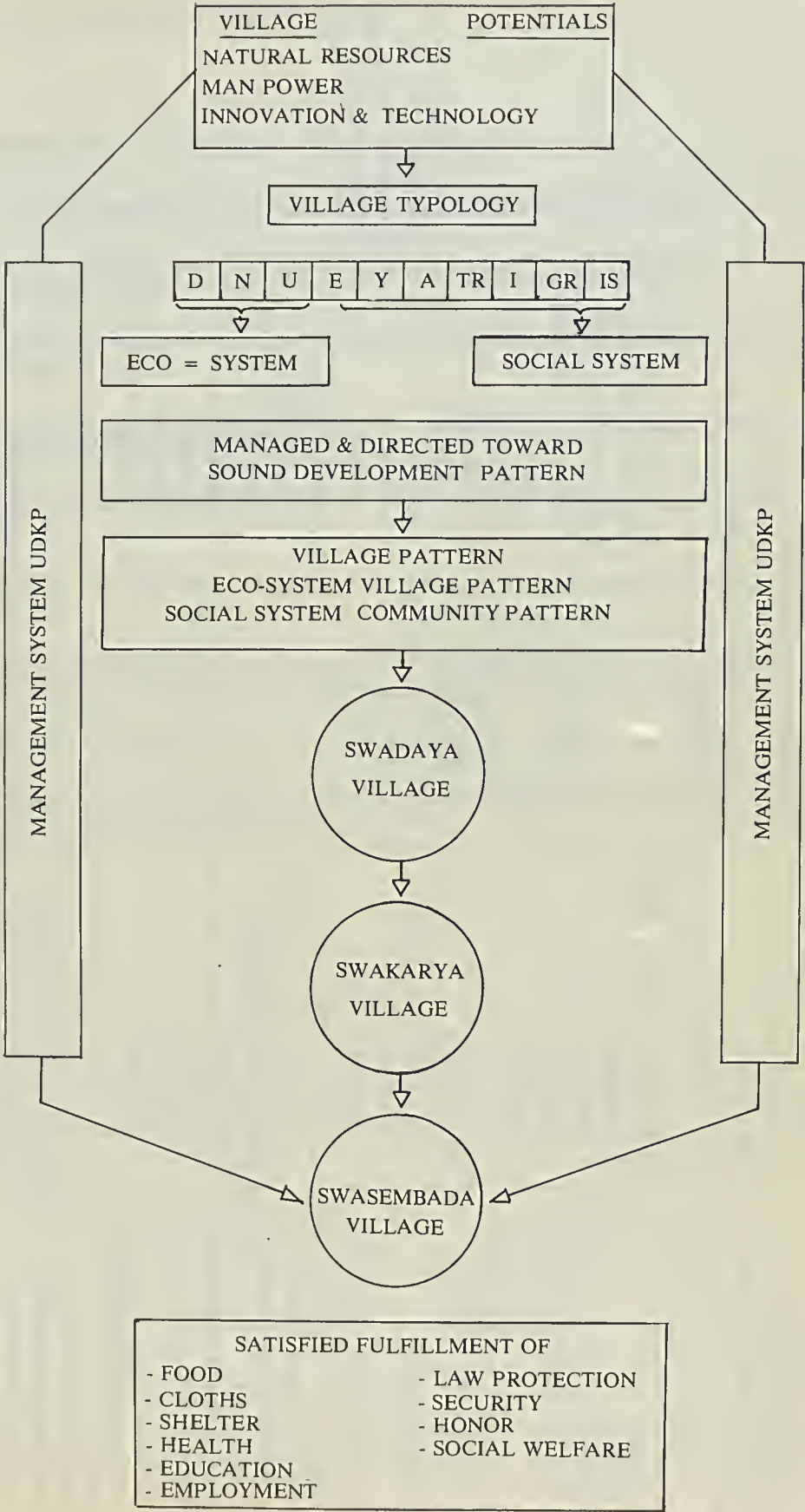
- A. to identify development centers within the Kabupaten,
- B. to identify the influential regions of every development centre which become market centers,
- C. to asses the magnitude of every selected development center,
- D. to compose a regional system from the structure of the development center.

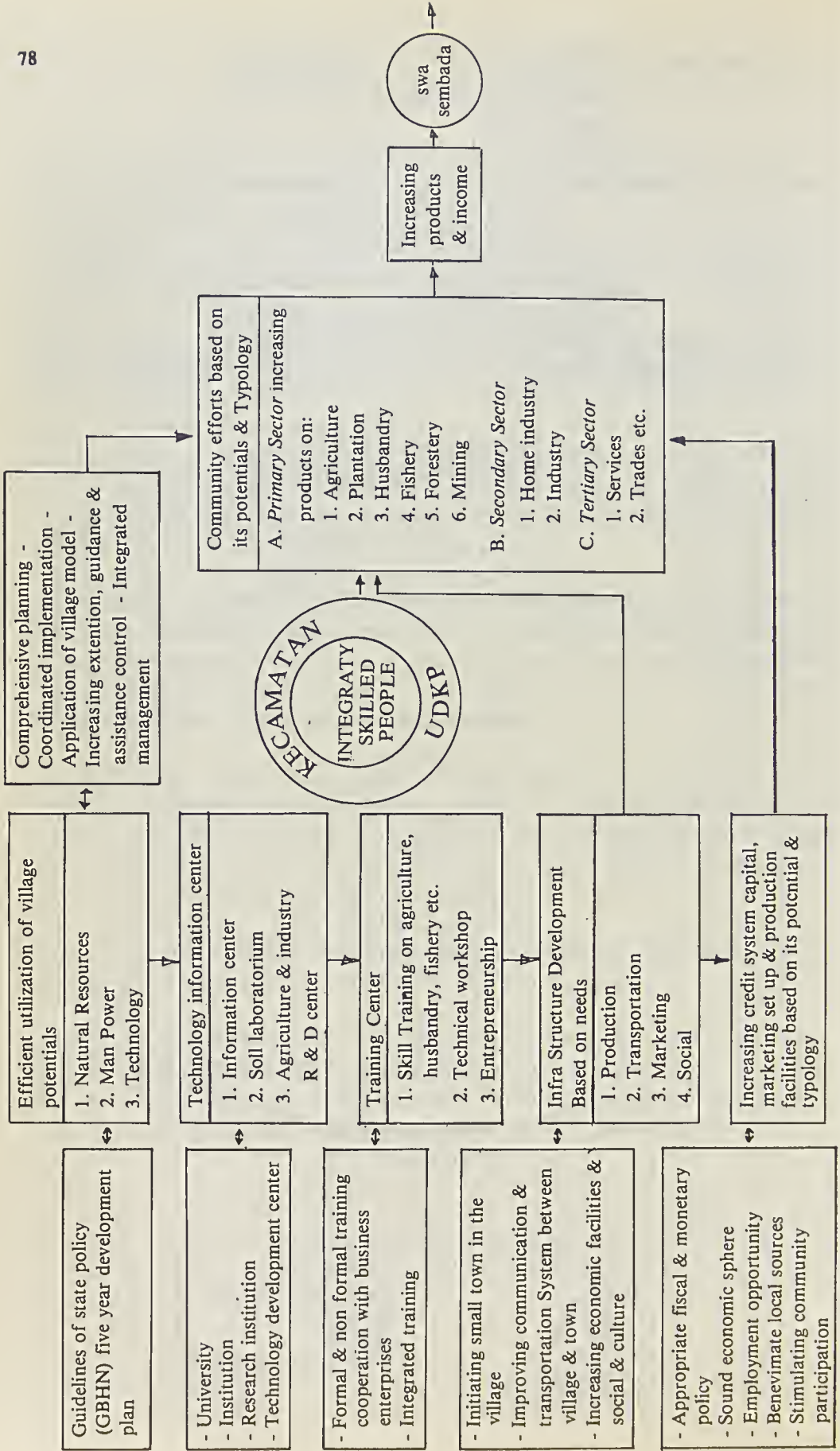
Those facilities should be directed toward their set-up based on a sound pattern to fulfil certain requirements needed for a village set-up according to their functions with regard to site value, function value, socio - economic value, and esthetic value.

VII. CONCLUSIONS

From the previous description of rural development in Indonesia some conclusions could be drawn as follows:

- There is no doubt that since the First Five Year Development Plan the emphasis is on rural development;
- Every department and some non-departmental agencies, local government, and rural communities has its own development projects;
- In reality those projects are implemented through a four pronged mechanism which is deconcentration, decentralization, co-act in administration, and community-initiated administration;
- In the implementation of those project coordination, integration and synchronization still have to be improved. This is due to the fact that the success of one project in the region does not automatically mean success in developing the rural area as an entity.
- Since the Second Five Year Development Plan the approach of development has been changed into a regionalization approach with their development centers respectively as follows: main development center, large development center, medium development center, and sub-development center. Those centers comprise a total system of development.
- A new system of developing rural area has been innovated which is called *Local Development Working Unit - UDKP*. The main function of this UDKP is to reinforce the implementation of rural development, in the sense of coordinating, integrating, synchronizing the planning process and monitoring the implementation of the projects.
- The Camat, as the head of kecamatan, is responsible for chairing the UDKP as to maintain the concept of unity of command.
- Therefore in developing rural areas in Indonesia the system used is not decentralized administration but rather deconcentrated administration by assigning the Camat, as the head of kecamatan of the lowest central government machinery, to chair the UDKP as a system of rural development.





REFERENCES

1. Republik Indonesia, *Undang-Undang Dasar 1945*, Departemen Penerangan
2. Republik Indonesia, TAP MPR NO. IV/1973 - *Garis-garis Besar Haluan Negara*, Departemen Penerangan, 1973
3. Republik Indonesia, TAP MPR NO. IV/1978 - *Garis-garis Besar Haluan Negara*, Departemen Penerangan, 1978
4. Republik Indonesia, *Undang-undang Nomor 5 Tahun 1974 - Pokok-pokok Pemerintahan di Daerah*, Departemen Penerangan, 1974
5. Republik Indonesia, *Pembangunan Lima Tahun I - 1969 - 1974*, Departemen Penerangan, 1969
6. Republik Indonesia, *Pembangunan Lima Tahun II - 1974 - 1979*, Departemen Penerangan, 1974
7. Republik Indonesia, Keputusan Presiden Republik Indonesia No: 44 dan 45 Tahun 1974 - *Pokok-pokok dan Susunan Organisasi Departemen*, Departemen Penerangan, 1974
8. Republik Indonesia, *Rural Development in Indonesia*, Department of Home Affairs, 1977
9. Republik Indonesia, *Unit Daerah Kerja Pembangunan - UDKP*, Direktorat Jenderal Pembangunan Desa, Departemen Dalam Negeri, 1977

AUSTRALIA AND THE SOUTHEAST ASIAN COUNTRIES*

Richard WOOLCOTT

INTRODUCTION

With the interruption, after years of patient and careful diplomatic effort, of the structure of superpower detente and the SALT process, partly as a result of Soviet intervention in Afghanistan, with continuing turbulence in Indochina and the consequent tragedy of the refugee problem, with the war between Iraq and Iran, with the dangerous situation in Afghanistan and tensions elsewhere in the Middle East, and with the growing global economic problems caused by increasing oil prices, inflation, and population pressures, the world we see around us in the 80s is a more dangerous place than it was at the outset of the 70s.

It is a situation which calls for closer cooperation between countries of this region to strengthen their individual and collective capacities to endure as stable, healthy nations.

Where, then, does Australia fit into this regional picture at this time? Australia, as an isolated continent, of mainly European social origin at the southern end of the world, faced, until relatively recently, three choices in its search for an identity in the world.

Firstly, we could have tried to cling to the perception of Australia as a Western outpost in Southeast Asia, in which case we could probably now be seen as a sort of Anglo-American step-child which never really grew up; a second-hand transplanted society, in danger of losing its momentum before it decided what it really wanted to be.

* Address by the Australian Ambassador to the Philippines (and former Deputy Secretary of the Department of Foreign Affairs and Ambassador to Indonesia), Mr. Richard Woolcott, to the Australian Administrative Staff College, Mt. Eliza, Victoria on 12 March 1981.

Secondly, we could have sought to retreat into our own vast and relatively isolated continent. Australia is the only continent on earth which is not shared, which is possessed by one, and only one nation. Also Australia is one of the few countries which has never been invaded by foreign forces. We could therefore have sought to turn our backs on the problems of our neighbours. We could have attempted to isolate ourselves from the problems to our north and sought to live an inward-looking materialist, and self-satisfied, complacent and comfortable national life.

Or, thirdly, we could work to become a distinctive, tolerant, cooperative and well regarded country of some importance, in the world community at large and especially in the region in which we live, the Asian and Pacific region.

While two of the three strains of thinking mentioned earlier - what might be called the satellite and the isolationist mentalities - regrettably, still exist in some sections of the Australian community, the majority of thinking Australians have made their decision about Australia, and about where Australia's interests lie and what Australians should seek to be in the world. Foreign Minister, Mr. Tony Street, said during his visit to Southeast Asia last November that Australia and the countries of Southeast Asia, share "a common concern for the economic progress, stability and security of the Southeast Asian region".

The process of placing more emphasis on Australia's links with Southeast Asia was initiated by the late Prime Minister Holt and accelerated by Prime Ministers William McMahon and, especially, Gough Whitlam. Each of these Prime Ministers also changed Australian immigration policy, progressively to eliminate racially discriminatory aspects of that policy. More recently, under Prime Minister Fraser, Australia has maintained an even higher level of involvement, not only in Southeast Asia and the Pacific, but also internationally in such troubled areas of the world as Southern Africa and the Middle East.

So, the Australian Government has made its choice. It now sees Australia very much as part of the Southeast Asian scene. A retreat into isolationism or a situation of American dependency are no longer practical policy courses for Australia. A main thrust of Australia's foreign policy is now, towards the full adjustment to its Southeast Asian environment. A growing Australian interest and involvement in Southeast Asia is, in fact, natural, necessary and irreversible. As former Foreign Minister, Andrew Peacock, said to the Philippine Foreign Minister, General Romulo, during his visit to Manila last year, "our relations with the countries of ASEAN are now at the heart and core of our foreign policy". This attitude has been confirmed more recently by Foreign

Minister Street, who sought to emphasize the priority which Australia places on its relations with Southeast Asia by completing official visits to four of the Five ASEAN countries, within three weeks of becoming Minister for Foreign Affairs.

Asia is where half the world lives. It is also where Australia lives, and will live for the rest of time.

Although Australians are not Asians - and should not pretend to be - they are nevertheless part of this region and I shall turn now to the way in which I see Australia's relationship with the countries of Southeast Asia developing in this decade. While the influences of our European-derived past remain, just as Spanish and American influences remain in the Philippines, or British influence remains in Singapore, the whole orientation of Australia's foreign policy has undergone a significant change in the past two decades which will, accelerate as this decade advances, and lead Australia into a closer and more complex political, economic, social and cultural association with the nations of Southeast Asia.

THE POLITICAL RELATIONSHIP

More and more Australia and the countries of Southeast Asia will be directly affected by the same events. Over the last year they have worked together closely on such problems as the Common Fund, on the need to stabilize the world sugar market, the exodus of Vietnamese refugees, and the Kampuchean situation. It is true to say that these issues have, in fact, drawn them closer together. This interdependence means that all our interests will be served by the existence of governments in Southeast Asia and Australia which are well disposed towards each other and in a close and consultative relationship. But consultation is a two-way street. Australia must remember to consult them and they must remember to consult Australia on regional issues of mutual interest.

I believe that Australia's approach to the ASEAN countries will increasingly be based on a shared view of common regional interests.

I believe too that there are important areas in which Australia and Southeast Asian political, strategic and economic interests will increasingly coincide. It is on the basis of these shared interests - for example in seeking to moderate problems in the economic relationships, in checking the disorderly or illegal flow of refugees and, indeed, of narcotics, and in promoting the region's political and economic interests in international organisations - that

the 80s will see a continuing growth in the substance, importance and complexity of Australia's relations with the countries of Southeast Asia.

In recent years Australia has developed increasingly close links with the ASEAN countries. The Australian Foreign Minister now meets ASEAN Foreign Ministers after their annual meetings, the next of which is to be held in Manila next June. Australia's Prime Minister met with ASEAN Heads of Government at the last ASEAN summit in Kuala Lumpur in August 1977, and it seems likely except that similar arrangements will be made if and when the next ASEAN Summit is held, also to be in Manila. There have been regular Ministerial exchanges, as well as an established series of officials' talks on both an ASEAN basis and a bilateral basis with the countries of Southeast Asia. These are all essential steps in the process of building up understanding between the different societies of Australia and the countries of Southeast Asia.

THE ECONOMIC RELATIONSHIP

Despite the importance of political issues, such as the situation in Indochina, broad economic issues are likely to be the major component in Australia's relationships with the countries of Southeast Asia, in a way in which they were not before, as this decade unfolds.

We can expect in the future that, as the Southeast Asian countries develop further and as their incomes rise, the opportunities for Australian investment, for a wider range of imports from Australia and the demands for Australia's technology will increase, especially in respect of resources and foodstuffs. Because of this, we must expect that, in some cases, the imbalance in trade between Australia and some Asian countries, for example, the Philippines, could actually increase, rather than decrease, despite best efforts on both sides to bridge the trade balance in Australia's favour.

On the other hand, it is really the overall Balance of Payments including tourism, aid, investment and remittances from the Southeast Asians living in Australia, which is a more accurate indicator of the total financial relationship between two countries, than the balance of trade. We also believe that Australian governments will accept that, if Australia is to take advantage of the growing economic opportunities in Southeast Asian countries, then Australia itself will accept that it needs to be ready to meet, as far as it can, reciprocal expectations from the Southeast Asian countries, especially on the issue of increased access to the Australian market for products of importance to them, which are under import restraint.

In the future attention should be focused more on the practical issues between Australia and the countries of Southeast Asia and trying to ensure that a conscious effort is made to bring Australia's policy actions into line with its public commitments. But there is still a need to build up the constituency in the community at large for the Australian involvement with the countries of Southeast Asia.

It is very disappointing to find, in some circles in Australia, a lack of interest, an uneasiness - in some cases almost an antagonism in some quarters towards some of the countries of Southeast Asia. One would have hoped that Australians would see living with neighbours with different cultures, different problems and, in some cases, different values as an exciting challenge. I suspect, however, that public interest and understanding of Southeast Asia, in contrast to the constituency in support of the Australian Government's efforts to strengthen its relations with Japan and even China, may actually have slipped back during the latter half of the Seventies. If so, this is a regrettable trend.

However, returning to the main theme, we would expect the 1980s to witness a substantial increase in the volume of trade between Australia and the countries of Southeast Asia. For example, in the last six years Australia's imports from ASEAN countries have grown from \$A 97 million to \$A 557 million - a healthy growth rate of 34% per annum and a rate which is double the rate of growth (17% per annum) of Australia's own exports to ASEAN countries in the same period. As mentioned earlier, Australia is conscious of the fact that a major concern of developing countries in Southeast Asia is the promotion of export-orientated manufacturing industries. The Australian Government acknowledge this and is prepared to do what it can, given Australia's own economic difficulties, to assist the access of ASEAN countries to the Australian market.

Australia has, in fact, already acted to improve its consultations on economic matters and trade with all of the ASEAN countries. In November 1978 a regular ASEAN/Australia Consultative Meeting, as well as a special working group on trade in the context of this Meeting were established. For example, during Prime Minister Fraser's visit to the Philippines in May 1979 the Australian/Philippine Trade Agreement was signed and since then several successful meetings of the Joint Commission, established under that agreement, have taken place to identify actual and potential problem areas before they become public issues.

THE ENERGY RELATIONSHIP

An important area in which Australia's relations with the countries of Southeast Asia must inevitably expand in the 1980s is that of energy. In some ways, Australia is well placed to help.

Australia is very conscious of the problems which non-oil producing Southeast Asian countries face in adjusting continually to escalating oil prices and to the uncertainty of future supplies. It is one of the few countries which do not burn oil to produce electric power and it also has massive deposits of coal. Australia will be glad to assist, as far as it can, Southeast Asian countries to reduce their dependence on imported oil by developing alternative sources of energy. At the ASEAN/Australia Consultative Meeting in May 1979, Australia emphasized its willingness to cooperate with ASEAN in the energy field.

In the Philippines, for example, Australia signed a nuclear safeguards agreement in August 1978, which clears the way for the sale of Australian uranium to the Philippines for its nuclear reactor in Bataan. Moreover, Prime Minister Fraser has given an undertaking to President Marcos that the Philippines can look to Australia as a reliable source of uranium in the years ahead. Australia would expect to be able to meet a Philippines requirement of about 1,150 tons of uranium from between 1984 and the end of the decade.

At the same time, it has offered assistance to the Philippines in developing its own capability to explore for uranium. The Australian Government has also undertaken, as part of its assistance program, a study on coal logistics, to determine the planning and investment requirements to move coal from the coal fields in the Philippines to the industrial centres of use. As Philippine coal deposits are expected to be inadequate, both in quantity and quality, to meet the future requirements of the Philippine energy program, especially in respect of the intention to use coal rather than oil, to generate power and to make cement. While the demand for Australian coal is substantial, it can be expected that Australian coal exporters, in the private sector, will be as helpful as they can be in seeking to meet the needs of ASEAN countries.

INVESTMENT

Australian direct investment in the ASEAN countries at present stands at about \$A 135 million or about 12% of Australia's total overseas investment. Australia also hosted an industrial cooperation conference in Melbourne in

June 1978 with the objective of strengthening links in the investment field between ASEAN and the Australian industrial and commercial sectors and given continuing stability, Australian investment, especially in joint ventures in Southeast Asia, will continue to increase. In the Philippines, for example, it is expected that the level of Australian investment will double over the next few years, as three of Australia's leading companies have recently decided to make major investments in the production of sheet metal and industrial gases, the total value of which could exceed \$A 45 million.

DEVELOPMENT ASSISTANCE

This resume of areas in which we would expect the Australian involvement with Southeast Asia to expand in the years ahead would not be complete without a reference to development cooperation. The Australian Government has clearly acknowledged its support for the objectives, which the ASEAN countries have set themselves, of steady progress towards self-reliance and self-sustaining development.

In each country in Southeast Asia—Australia has technical assistance programs. After Papua New Guinea, with which country it has a rather special historical association, the largest recipient of Australian assistance is the ASEAN region. Australia's current aid commitment to the ASEAN countries stands at present \$A 250 million. It should be added that Australian aid is given without strings and in grant form, thereby avoiding the burdens associated with repayments and debt servicing. It is also Australia's policy to concentrate on formerly disadvantaged rural areas - like, for example, Kalimantan in Indonesia and Zamboanga del Sur and Northern Samar in the Philippines - with the objectives of benefiting those most in need and of raising rural living standards.

In addition to the bilateral programs with the countries in the region, Australia is also involved in innovative joint projects with the ASEAN countries as a group in such cooperative programs as the ASEAN Protein Project and the Food Handling Project.

REFUGEES

The burden imposed by the massive exodus of almost a million people from the countries of Indochina since April 1975 is another issue which has affected the countries of Southeast Asia and Australia and led to closer consulta-

tion between them. Australia acknowledges the burden has fallen largely on the ASEAN countries, especially Thailand and Malaysia. But although it is further away from Indochina, Australia does appreciate the problems faced by Southeast Asian countries.

Australia has become a country of resettlement for refugees. Since World War II some 400,000 refugees and displaced persons, including about 40,000 from Vietnam have found new homes in Australia. Moreover, Australia has contributed more than \$A 30 million in relief assistance to refugees during the last two years. In fact, at present one in every 390 persons in Australia is a refugee. This is the highest per capita figure at present for any country in the world.

DEFENCE COOPERATION

While ASEAN is not a military organisation, recent events in Indochina, and further afield in Afghanistan, have reminded Australians that they do share a common concern for the security of the Southeast Asian region. Australia has already established modest defence cooperation programs, which include the provision of technical assistance, training and combined exercises, with each of the member countries of ASEAN. It is expected that cooperation in this area both will continue and will grow in the years ahead.

Time precludes me from outlining all of the areas in which Australia's relationships with Asia are growing and will continue to grow. Other areas in which we shall witness growing contacts and cooperation between Australia and the countries of Southeast Asia in the 1980s, include the development of closer cooperation between the private sectors of the two countries, the expansion of Australia's cultural, academic and student exchanges and in liaison to prevent the movement of narcotics. It seems likely that two of these areas - the development of contacts between the private sectors and between academic institutions - will increase considerably in the year ahead to our mutual advantage.

Australia's relationships with the countries of Southeast Asia are developing constructively and positively, despite the occasional emergence of issues on which they differ. But this in no way diminishes the need for greater knowledge and understanding of each other's different cultures, problems, aspirations, values and political institutions. Images of Australia vary in ASEAN countries as indeed images of ASEAN countries vary within the Australian community. While many people in Southeast Asia accept Australia

as a well-meaning and cooperative southern neighbour with a special interest in the region, some others, hopefully few in number, still tend to see Australia in more negative terms as rich, selfish, protectionist, racist, self-satisfied and essentially uninterested in the region to its immediate north.

On the other hand, while some Australians see the countries of Southeast Asia as natural neighbours with expanding economies and as areas of future opportunity, some others, also hopefully few in number, regard these countries as problem-stricken and undemocratic countries which Australia should treat with suspicion.

What we all need to do - Australians, Indonesians, Filipinos, Thais, Malaysians, Singaporeans, etc. - is to accept that each country will have its own way of dealing with its own problems and to keep before us the overriding importance to all of us of regional cooperation and understanding. This does not mean that Australia should ignore abuses of human rights, should they occur; nor does it mean it should seek the favour of ASEAN countries regardless of their actions. But it does mean that, as a matter of enlightened self-interest, Australia should seek to understand Asian attitudes and situations before hurrying to read them moral lectures from its comfortable pulpit across the Arafuru Sea.

Australia and the countries of Southeast Asia are of course different in many ways. The ethnic, cultural and social backgrounds of our peoples are different too. In these circumstances and as independent neighbours, it is natural that, from time to time, they will have different perceptions of different issues and different interests. Problems will inevitably arise; but history and geography have made them neighbours for the rest of time and, there are many common purposes and interests which they share and on which they can build. It is these common purposes and interests on which they should focus their attention in the future. It is hoped that Australia and the countries of Southeast Asia will each make, as the 1980s unfold; a positive and continuing effort to understand each other better and to consolidate longer term relationships with each other in their mutual interests. In this context there is, a special role for institutions such as our Universities, the Australian Administrative Staff College, both staff and course members in working to increase contacts and exchanges in the interests of wider understanding. Thirty-five years after the end of the Second World War, Australia and the countries of Southeast Asia still do not know enough about each other and they still do not consult each other as closely as they should. Australians should know more about Indonesia, the Philippines, Malaysia, Thailand and Singapore than they do. And Indonesians, Filipinos, Malaysians, Thais and Singaporeans should know more about Australians than they do.

CONCLUDING COMMENT

To conclude, it is true to say that the political commitment in Australia to develop Australia's relations with the countries of Southeast Asia has never been stronger. The business community, too, is actively involved in enlarging opportunities for Australia in Southeast Asia. It is amongst the public at large, including the media, that more needs to be done to stimulate a deeper understanding of the fact that Australians live in the Southeast Asian region and that they must come to terms with their geo-political environment in a sound and sensible way.

Such addresses are meant to have a message. In this sense the message is this:

Australia's interest and involvement in Southeast Asia is already strong and it will grow in the years ahead. For Australia, Asia, and especially relations with the countries of ASEAN, must, however complex the issues might be, always be a permanent and vital interest. Australia's concern about the well-being of its neighbours to its north and its wish to strengthen contacts and relationships with them in all fields of common interest should be central and enduring feature of Australian foreign policy. The fact that there may be disagreements from time to time on specific issues in no way diminishes this.

I would hope too that Australia's interest in the Asian region is welcomed, accepted and reciprocated and that, in future, Australia's policies and actions as well as those of the countries of Southeast Asia will increasingly be seen to reinforce the publicly stated political commitments to strengthen relationships, in the interests of the region as a whole.

I would hope that Australia will come to be increasingly regarded not, as a meddlesome alien presence but as a natural friend in Southeast Asia. Although Australians are not themselves members of ASEAN, it is hoped that they will be increasingly accepted as an honorary member of the Southeast Asian Club. To paraphrase an old English saying Australia wants to be seen in Southeast Asia, not as "the odd man out", but as "the odd man in".

BOOK REVIEW

ASEAN REGIONAL CO-OPERATION, DEVELOPMENT IN BANKING AND FINANCE

by Michael T. SKULLY, Occasional Paper No. 56, Institute of Southeast Asian Studies, Singapore, 1979 (78 pages). Price: S\$ 8.00 (Singapore Dollars).
Review Article by Pande Radja SILALAH

This book consists of 7 chapters analysing problems in connection with the ASEAN Regional Financial Corporation with the objective to stimulate and expand regional cooperation in this field.

I. ASEAN INTERGOVERNMENTAL REGIONAL COOPERATION EFFORTS

In the first part of the book the author put forward his view that the government's role in regional cooperation in the fields of finances and banking is very significant. Success at the multi-government level, too, regardless of how nominal, also stimulates further private sector efforts. This is mainly due to the strict control on the part of the government over activities of banking and financial institutions. In this chapter the author explained the history of development of cooperation which has been executed so far, together with the formation of the body, the organization, the structure and the function of the respective units. Besides, the author also pointed out the problems faced in such cooperation.

II. ASEAN PRIVATE SECTOR REGIONAL COOPERATION EFFORTS

Like in the first chapter, the author also mentioned the development of efforts which are pursued by the private sector in pursuit of cooperation in the field of banking and finances. Together with an information on the institutions which have been established and the structure of its organizations, and the functions of the respective units within the organization, the author put forward several proposals on the part of the private sector which are interesting and to be paid attention to, particularly the proposal of major bank-

ing. The proposals which he indicated, include the establishment of a regional bankers acceptance market in order to improve the region's bank abilities to finance regional trade; the establishment of an ASEAN clearing union; the establishment of a public sector and a private development institution to assist ASEAN regional projects and other financing efforts; to examine the possibility of an ASEAN export insurance agency as recommended by the U.N. team.

With reference to those views the author explains how their development was and how the obstructions he had faced were. The author put forward clearly that regional efforts in ASEAN are on a consensus basis and thus very time consuming; the group can progress only as fast as its slowest member. Besides, he put forward also the ASEAN had formed: (i) ASEAN Insurance Council with the basic function to promote regional cooperation and development within all areas of ASEAN domestic insurance and reinsurance business. He also mentioned in detail the function of the institution together with the working method of the supporting units and the problems which have been faced by the organization; (ii) ASEAN Security Industry; As for the institution the author revealed that up to now the institution has not yet shown development; (iii) ASEAN Federation of Accountants. This body-as mentioned by the author will be very useful. But until now it is still in its development stage and activities, and comprises the development of its infrastructure-such as education and training of personnel-with an eye on the future in which it can develop rapidly.

III. REGIONAL EFFORTS OF FOREIGN OWNED INSTITUTIONS

Based on observation and research the author mentioned that foreign banks were very important in developing the local banking industry from the informal network of pawnshops and private money lenders to its present stage. According to aforementioned conclusion the author mentioned briefly the history of the activities of foreign banking in ASEAN member countries since the 19th century. According to the author, foreign influences are still strong on local banking operations although the banks are owned by the community or the government of the ASEAN member countries.

IV. REGIONAL EFFORTS OF LOCAL INSTITUTIONS

In his analysis of regional efforts of local institutions the author concluded, although ASEAN has been in existence now (1979) for almost twelve years the regional expansion of domestic ASEAN Banks is still a relatively new

phenomenon. As an indicator the author mentioned that the banks of the respective ASEAN member countries are not yet in full operation in each of these countries.

V. THE ASIAN DOLLAR MARKET'S REGIONAL ROLE

The Asian Dollar Market was formalized in 1968 and today there is an active and substantial two-way flow of funds between the Asian countries and the ASEAN dollar market. In the end of 1978, about 21% of the Asian Currency Unit (ACU) assets represented claims of banks and non-banks (excluding Singapore) while liabilities of ACUs to regional banks and non-banks (excluding Singapore) formed about of ACU liabilities. In this connection the author revealed the developments which have been achieved in several ASEAN member countries, and explained also the reasons of development or the factors of influence, such as the differences in tax systems in these countries.

The author also mentioned that The Asian Dollar Market could be beneficial for ASEAN and could, for instance, be seen as a source for much of ASEAN's new investment capital. Besides, the author mentioned also that another area for greater ASEAN trade finance involvement in ACU concerns the bankers acceptance market, already available within the Singapore ACUs. Efforts of the institutions existing in the respective ASEAN member countries can be considered as not equally performed. As for attracting funds and how to utilize them the two ASEAN member countries which are prominent are Singapore and the Philippines. Both countries have the ambition to make themselves a financial centre for the Far East in general, and ASEAN in particular. They exert such effort through certain incentives, such as taxes.

VI. A COMPARISON OF DOMESTIC FINANCIAL DEVELOPMENT OF THE ASEAN COUNTRIES

In this chapter the author revealed that ironically, much of the regional trade is presently serviced by foreign banks with multiple branch representation within the region. Similarly, in the insurance industry as inter-regional investment grows and domestic firms develop into multinationals, foreign-owned insurers through multicountry operations will be best suited to conduct the business. The weakness is described by the author as due to the fact that it cannot be separated from the history of development of the financial institutions in ASEAN countries. Historically, the indigenous banks worked to complement, rather than compete with the colonial banks, and this influence still

exists until now. As for the sources of funds for the financial institutions, the author gave a picture with data of how small these funds are which can be utilised by the ASEAN financial institutions. This is why the competing power of the ASEAN financial institution is so low.

Each ASEAN country respectively has exerted efforts to strengthen its financial banking position. And the success of this effort depends on their ability to make their economic development successful and rapidly canalise the available funds properly. As an indicator the author gave data on the comparisons of credit according to the economic activities (economic sector) of the respective ASEAN country. It can be seen from these data that only a small part of the credit is allocated to the agricultural sector while this particular sector represents the power of the ASEAN countries as in the case with other developing countries.

On the insurance industry the author also mentioned that the insurance industry in both the general and life insurance business lines has experienced rapid growth over the past few years, and the increase in the life policy ratio is even more remarkable when population growth is considered. However, the general insurance industry suffers in a subsistence farming environment and in general the insurance awareness of the ASEAN region, as with most developing countries, is quite low outside the corporate sector and upper class. Also in connection with this matter the author pointed out that as with the banking industry, the industry within the ASEAN region was basically foreign developed, normally by their respective colonial power.

VII. THE FUTURE OF ASEAN COOPERATION IN BANKING AND FINANCE

Based on the analysis of the banking and financial development in ASEAN countries the author gave several proposals (suggestions) which are in line with the objective of the writing of the book i.e. to promote regional cooperation and planning in intra-regional financial matters. Those proposals are e.g.:

- to standardise the terminologies used in the local market;
- to establish full intra-ASEAN bank representation is to grant one new domestic branch to each country not already represented;
- the formation of an ASEAN Bank along the lines of the international bank of Singapore with trade and foreign exchange rather than a development orientation would then be granted a full banking licence in each of the member country;

- to establish and/or to improve an ASEAN Clearing Union, a multi-government ASEAN Development Bank, a private sector ASEAN Development Finance Corporation, an ASEAN Bankers Acceptance Market, and an ASEAN export credit insurance scheme.

We can conclude from the entire contents of the book that the author, in a specific way has analysed the matters which are connected with financial problems faced by ASEAN. Many facts and data which have been mentioned can reveal what the problems the ASEAN countries are facing really are. Based on these informations, several ways to overcome the existing problems lie now open and also the possibility of how to further develop efforts which have been done before. Therefore, we can say that the contribution of this book could represent an effort to promote regional cooperation and planning in intra-regional financial matters of ASEAN.

CHRONICLES

APRIL - JUNE 1981

Internal Affairs

Receiving the participants of the 1981 Meeting of Indonesian Armed Forces Commanders at the State Palace on April 2, President Soeharto explained the issue on referendum and the background of the appointment of ABRI members in DPR (Parliament) and the appointment of one third of the MPR's (People's Consultative Assembly) members. There has been a national consensus since the beginning of the New Order's struggle not to put into practice article 37 of the 1945 Constitution but to implement purely and consistently Pancasila and 1945 Constitution. This explanation was very important for the Armed Forces' leaders in order to make them better informed and therefore be more responsible towards the issue together with its background. It should be noted that President Soeharto's speech in Bangkok on March 26, 1981 was just a follow up of his own explanation given at the meeting of ABRI's Commanders held in Pekanbaru in 1980. The FKP (Functional Group Faction) expressed its concurrence with President Soeharto's view to hold a referendum in order to safeguard Pancasila and the 1945 Constitution if DPR wants to implement article 37 of the 1945 Constitution. Meanwhile the chairman of PDI (Indonesian Democratic Party) faction disagreed with the complete alteration of the national consensus. In his opinion, the consensus need only some improvements which is in fact reflected in the amendment of law nos 15/69 and 16/69 concerning the General Elections and the Structure of DPR and MPR. Besides, the appointment of one third of the MPR's membership did not create any problem.

Preparations of the forthcoming general elections seem to give color to the socio-political situation of Indonesia. Opening the working conference of the East Java PPP (United Development Party), Mr. Sunandar Priosudarmo, the Governor of East Java Province launched an idea to hold joint campaigns (by the three contestants of the general elections). One of the PPP members considered Mr. Sunandar's idea as favorable for the development of democracy in Indonesia. Meanwhile, the chairman of PDI (Indonesian Democratic Party) considered it a very good idea provided that it would not lead into a kind of speech contest or comedy. The secretary of FKP (Functional Group Faction)

considered this joint campaign a progressive idea. It was also decided that the campaigns should last only for 45 days and not for 60 days as mentioned before. The Minister of Internal Affairs emphasized that the purpose of the forthcoming general elections is not to create a new state with another philosophy. On April 29, the Minister of Defence and Security said in Denpasar that in preparing the forthcoming general elections people should not fall into a trap of political frictions caused by rumours. Besides, as hoped by the president, the principles of a direct, general, free and secret election should be maintained.

On April 16, 1981 President Soeharto inaugurated the Gunung Sari Dam and change the name of Karang Kates Hydro-electric Generating Plant into the Prof. Sutami Hydro-electric Plant. On this occasion the president pointed out that development programmes are meant for the benefit of the people at large, particularly the small people. At present Indonesia is making hard efforts to change her inherited bad past into a good future. Besides, the president emphasized also that during the third Pelita (Five Year Development) all school-age children would be given the opportunity to learn at elementary schools. On April 29, the president inaugurated a new cement factory, P.T. Semen Baturaja, in Baturaja near Palembang, Sumatra, and the modernized Sriwijaya fertilizer plant. On this occasion the president said that it is the human factor that plays an important role in a successful development. Indonesia now is more determined to build a better future.

On April 4, all ministers simultaneously handed over DIPs (lists of proposed projects) together with their respective operational directives to 27 provincial governors. The ministers also read the president's written speech which said among others that: (a) although Indonesia was almost paralyzed by inflation in 1966 (the greatest inflation rate in the world by more or less 650%) she becomes one of the countries having the ability to curb inflation (rate); (b) the DIP's hand-over should be considered as the symbol of Indonesia's willingness to continue her development programmes. Meanwhile, Prof. Sumitro said that in 1981 Indonesia will be freed from the world economic recession since Indonesia is able to depend on some of her available natural resources. Indonesia will then be able to benefit from the Japanese economic growth by: (a) increasing her foreign exchange; (b) stepping up production and (c) improving her employment opportunities.

Pangkopkamtib (Head of Command for the Restoration of Order and Security) accompanied by the Minister of Religious Affairs held a meeting with the Moslem Leaders in Jakarta on April 20, to explain the Woyla hijacking tragedy. He explains also that the terrors occurring since 1976 until the recent hijacking had a political aim to set up an Islamic State which was clearly

against the 1945 Constitution and Pancasila. The government will eradicate all forms of terrors because they are against the law and marred the image of religion. Besides, we should be able to make distinctions between religion and followers of that religion. On this occasion President Soeharto said that we need not establish a new board as a communication forum between ulemas and government officials since the MUI (Indonesian Ulemas Council) will do.

At the plenary cabinet session held on April 28, the chief of BAKIN (Coordinating Body for the State Intelligence) gave his predictions on the national security and political condition in 1981-1982 among which are:

1. The intensifying political sphere preceding the general elections could be considered normal.
2. The stable condition of the national development gave a good prospect for the Kabinet Pembangunan III (Third Development Cabinet) to carry out its duties.
3. The recent security disturbances were considered as local disturbances which would not affect Indonesia's national security.

In a limited cabinet session on financial, economic and industrial affairs held on May 6, it was reported that although there had been a world economic recession in 1980, the Indonesian export rate had increased up to 40.5 per cent compared with that of 1979. The inflation growth rate in April 1981 was 0.93 per cent (in April 1980 it was 1.04%). The Indonesian export in 1980 had mounted to US\$ 21.1 billion (US\$ 15.6 billion in 1979) of which US\$ 6.19 billion came from the export of the non-oil commodities.

On May 7, the head of the Indonesian Air Force, Marshal Ashadi Tjahjadi on behalf of the Minister of Defence and Security handed over officially the "Menag" rocket factory to P.T. Nurtanio. The latter did not only produce light air crafts or helicopters but will also produce fighter planes.

With regard to ABRI's duties to uphold peace and order, the Minister of Defence and Security in a meeting with the civil and military officials from South Sumatra Province on May 15 told that the government had no intention to discredit any group. On another occasion the Minister of Religious Affairs also stated that the government's action concerning the hijacking of Woyla was not to discredit any religion.

Presidential Decree no. 18/1981 was the perfection of the Presidential Decree no. 14A/1980 to assist the economically weak group. Through the presidential decree the government did not intend to assist the economically weak group to get commissions on projects entrusted to it, but it aimed at giving them an opportunity to grow and to be self-reliant.

In the opening speech of the working conference of the Department of Religious Affairs on May 25, President Soeharto stated firmly that Indonesia as a state based on Pancasila is not a secular state nor a theocratic state based on any religion. Every citizen has the right to adhere to any religion he prefers and to observe the dictates of his own religion which is guaranteed by the State.

The Indonesian Minister of Mining and Energy, Prof. Subroto, as the President of OPEC, presided the 60th OPEC meeting in Geneva on May 25-26. This meeting had come to the conclusions which include among others things: to freeze the oil prices and to reduce by 10% the present total production. Subroto admitted that Indonesia's income from oil might decrease. As a member of OPEC, Indonesia will freeze her oil prices and also reduce her oil production. This policy elicited reactions from many parts of Indonesia. Some economic observers hoped that the freezing of the oil prices will not affect the implementation of 1981/1982 State Budget. With regard to the OPEC's decision the Indonesian Parliament was of the opinion that the 1981/1982 State Budget should be saved first. On the other hand, the Finance Minister, Mr. Ali Wardhana in a meeting with Parliament's Commission on State Budget Affairs on June 5 stated that Indonesia's income from oil might decline but it would be still within certain safe limits.

In a limited cabinet session on economy, finance and industrial affairs, held on June 3, Minister of Industry, Mr. A.R. Soehoed reported that the small industrial plants in Magetan which would be concentrated in leather industries, would be inaugurated. The first small industrial estate was established in Yogyakarta. The new ones would also be established in Sidoarjo. Besides, there was also a plan to establish some industrial plants which although they were not very large but could be considered very important to support development plans. They were among others things factories producing basic materials for pesticides, DDT and large tyres.

To increase the export of the non-oil commodities, the Minister of Trade and Cooperatives explained in June that the government had taken a new policy of free export of any industrial products which will or make a good price in international markets. The government will import these commodities if they are needed to meet the needs of domestic consumption. The government will increase the commodities that have been given export certificates.

International Relations

In a sub-committee session of the U.S. Parliament held on March 31, 1981, the Assistant of the U.S. Secretary of State for the East Asia and Pacific

regions, Mr. Michael Armacoast asked the U.S. government to give Indonesia financial aids by about US\$ 48 million to finance security affairs and a sum of US\$ 105 million as an economic aid. Due to her strategic position in relation to the Indian Ocean and Pacific regions, Indonesia is considered important for the U.S. 7th Fleet. The Indonesian economic and political stability, therefore, is very important because Indonesia gives the strongest and the most reliable support to ASEAN. She has always the highest sense of solidarity among the other ASEAN member countries to face Vietnamese invasion and occupation in Kampuchea.

The session of the Islamic Commission for Economic, Cultural and Social Affairs, which was held in Jakarta on March 30-April 2, 1981 and which was headed by the Director General for Foreign Economic and Socio-Cultural Affairs of the Department of Foreign Affairs issued a number of recommendations for the implementation of the decisions of the Third Islamic Summit. The obstacle to be surmounted is how to collect a capital of US\$ 50 million for the Islamic Institution.

A specific session of ASEAN Inter-Parliamentary Organization (AIPO) was held in Jakarta on April 12-16, 1981. At the same time there was also a dialogue between AIPO and the European Parliament. Delivering his speech at the opening ceremony President Soeharto said that such a dialogue should be broadened and popularized since it is an important means for cooperation between ASEAN and West European countries which will greatly promote the North-South Dialogue.

The Sultan of Brunei paid an unofficial visit to Indonesia on April 9-14, to strengthen friendly relations between Indonesia and Brunei and to discuss preparations for Brunei's Independence in 1983.

In a joint communique on May 1, the Indonesian and Laotian Foreign Minister stated that serious efforts would be made to step up technological, economic and social cooperation between the two countries. Meanwhile, on his visit to Indonesia on May 2-6, Prime Minister R. Premadesa of Sri Lanka discussed the possibility of stepping up cooperation between Indonesia and Sri Lanka and the possibility of Sri Lanka to get oil supplies from Indonesia. The visiting Prime Minister mentioned the relevance of the Bandung Spirit until now. Besides, he was also impressed by the development of ASEAN and expressed his country's wish to import oil from Indonesia.

President Soeharto inaugurated the ASEAN Secretariat Building in Jakarta on May 9. The day before, the ASEAN Foreign Ministers had held an informal meeting to discuss the solution of the Kampuchean problem. They jointly

agreed among other things: to approve the support of many countries for holding an International Conference on Kampuchea. They welcomed the efforts made by the Kampuchean people in defending their country's sovereignty and territorial integrity. They were determined to second the motion of holding the conference at the earliest practical date. Their statement was sent to the United Nations Secretary General.

The 24th meeting of IGGI (Inter Governmental Groups on Indonesia) was held in Amsterdam to discuss financial aid to Indonesia. The Dutch Development Cooperation Minister, Mr. Jan de Koning as the Head of IGGI had told the Western countries to open their markets for Indonesian industrial products and to invest their capital and share their technology as to create a new foundation of equity which will be mutually benefitting. All members of IGGI were of the same opinion to give financial aid totalling US\$ 2.1 billion to the Indonesian government to finance 33 development projects for the 1981/1982 fiscal year.

Foreign Minister Mochtar Kusumaatmadja said that his presence at UNO's meeting discussing sanctions to be taken against South Africa and his recent visit to Tanzania was a clear proof that the Indonesian policy on Africa has been increasingly more active. It is also obvious that Indonesia is strongly against South Africa's racism. Besides, in April 1981 the Indonesian Foreign Minister visited some countries along the Persian Gulf to enhance cooperation between Indonesia and these countries and to explain the real situation of East Timor. Meanwhile, Vice President Adam Malik who also attended a meeting between Asia Society and Willy Brandt Commission criticized some developed countries for their actions which had greatly harmed the poor countries.

The eleventh meeting of the ASEAN Economic Ministers held in Jakarta on May 29-30, was presided by the Indonesian Coordination Minister for Economic, Financial and Industrial Affairs, Mr. Wijoyo Nitisastro. The conference came to a consensus and signed the agreements on ASEAN Industrial Complementation (AIC). The AIC's agreement gives access to each ASEAN member country to produce different components of a certain production.

Indonesian Foreign Minister, Mr. Mochtar Kusumaatmadja led the Indonesian delegation to the Foreign Ministerial Conference of the Organization of Islamic Countries held in Bagdad on June 1-6. Indonesia was appointed as one of 15 members of the Committee on Jerusalem. After his arrival at Halim Perdanakusuma Airport, Mr. Mochtar Kusumaatmadja said that the conference had positively respected the Indonesian view. Besides, the conference had also decided to: (1) improve socio-cultural cooperations. Indonesia was willing to extend financial aid by about US\$ 300.000 to the Islamic Solidarity Fund;

(2) restore Demak mosque and establish a centre for Arabic Language Teaching in Indonesia.

The Deputy Prime Minister of North Korea held a meeting with President Soeharto in Jakarta on June 4. Indonesia and North Korea agreed to promote their economic cooperation and trade relations. Indonesia welcomed any effort to reunite peacefully North and South Korea since it was considered the best way to maintain stability in these regions. Meanwhile, the Deputy Prime Minister of North Korea said that his country would like to import Indonesian minerals.

Indonesian Foreign Minister attended the ASEAN Foreign Ministerial Meeting held in the Philippines on June 17-18, to seek a political solution to the Kampuchean problem. This meeting proposed: (a) the withdrawal of all foreign troops from Kampuchea; (b) the deployment of U.N. peace force in Kampuchea, and (c) to give the Kampuchean people their rights for self-determination.

The South Korean President, Mr. Chun Doo Hwan, visited Indonesia on June 25 to enhance cooperation between South Korea and Indonesia. In a joint communique the two presidents agreed to improve their economic relation. Besides, South Korea highly respected and supported the ASEAN's efforts to solve the problems on Kampuchea. On the other hand Indonesia supported the peaceful reunification of Korea.

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